Tow Center for Digital Journalism
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LIES, DAMN LIES, AND VIRAL CONTENT

HOW NEWS WEBSITES SPREAD (AND DEBUNK) ONLINE RUMORS, UNVERIFIED CLAIMS, AND MISINFORMATION

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I. Executive Summary

News organizations are meant to play a critical role in the dissemination of quality, accurate information in society. This has become more challenging with the onslaught of hoaxes, misinformation, and other forms of inaccurate content that flow constantly over digital platforms.

Journalists today have an imperative—and an opportunity—to sift through the mass of content being created and shared in order to separate true from false, and to help the truth to spread.

Unfortunately, as this paper details, that isn't the current reality of how news organizations cover unverified claims, online rumors, and viral content. Lies spread much farther than the truth, and news organizations play a powerful role in making this happen.

News websites dedicate far more time and resources to propagating questionable and often false claims than they do working to verify and/or debunk viral content and online rumors. Rather than acting as a source of accurate information, online media frequently promote misinformation in an attempt to drive traffic and social engagement.

The above conclusions are the result of several months spent gathering and analyzing quantitative and qualitative data about how news organizations cover unverified claims and work to debunk false online information. This included interviews with journalists and other practitioners, a review of rel-

evant scientific literature, and the analysis of over 1,500 news articles about more than 100 online rumors that circulated in the online press between August and December of 2014.

Many of the trends and findings detailed in the paper reflect poorly on how online media behave. Journalists have always sought out emerging (and often unverified) news. They have always followed-on the reports of other news organizations. But today the bar for what is worth giving attention seems to be much lower. There are also widely used practices in online news that are misleading and confusing to the public. These practices reflect short-term thinking that ultimately fails to deliver the full value of a piece of emerging news.

What are these bad practices? Key findings include:

- Many news sites apply little or no basic verification to the claims they pass on. Instead, they rely on linking-out to other media reports, which themselves often only cite other media reports as well. The story's point of origin, once traced back through the chain of links, is often something posted on social media or a thinly sourced claim from a person or entity.
- Among other problems, this lack of verification makes journalists easy marks for hoaxsters and others who seek to gain credibility and traffic by getting the press to cite their claims and content.
- News organizations are inconsistent at best at following up on the rumors and claims they offer initial coverage. This is likely connected to the fact that they pass them on without adding reporting or value. With such little effort put into the initial rewrite of a rumor, there is little thought or incentive to follow up. The potential for traffic is also greatest when a claim or rumor is new. So journalists jump fast, and frequently, to capture traffic. Then they move on.

- News organizations reporting rumors and unverified claims often do so in ways that bias the reader toward thinking the claim is true. The data collected using the Emergent database revealed that many news organizations pair an article about a rumor or unverified claim with a headline that declares it to be true. This is a fundamentally dishonest practice.

- News organizations utilize a range of hedging language and attribution formulations ("reportedly," "claims," etc.) to convey that information they are passing on is unverified. They frequently use headlines that express the unverified claim as a question ("Did a woman have a third breast added?"). However, research shows these subtleties result in misinformed audiences. These approaches lack consistency and journalists rarely use terms and disclosures that clearly convey which elements are unverified and why they are choosing to cover them.

Much of the above is the result of a combination of economic, cultural, temporal, technological, and competitive factors. But none of these justify the spread of dubious tales sourced solely from social media, the propagation of hoaxes, or spotlighting questionable claims to achieve widespread circulation. This is the opposite of the role journalists are supposed to play in the information ecosystem. Yet it's the norm for how many newsrooms deal with viral and user-generated content, and with online rumors.

It's a vicious-yet-familiar cycle: A claim makes its way to social media or elsewhere online. One or a few news sites choose to repeat it. Some employ headlines that declare the claim to be true to encourage sharing and clicks, while others use hedging language such as "reportedly." Once given a stamp of credibility by the press, the claim is now primed for other news sites to follow-on and repeat it, pointing back to the earlier sites. Eventually its point of origin is obscured by a mass of interlinked news articles, few (if any) of which add reporting or context for the reader.

Within minutes or hours a claim can morph from a lone tweet or badly sourced report to a story repeated by dozens of news websites, generating tens of thousands of shares. Once a certain critical mass is met, repetition has a powerful effect on belief. The rumor becomes true for readers simply by virtue of its ubiquity.

Meanwhile, news organizations that maintain higher standards for the content they aggregate and publish remain silent and restrained. They don't jump on viral content and emerging news—but, generally, nor do they make a concerted effort to debunk or correct falsehoods or questionable claims.

This leads to perhaps my most important conclusion and recommendation: News organizations should move to occupy the middle ground between mindless propagation and wordless restraint.

Unfortunately, at the moment, there are few journalists dedicated to checking, adding value to, and, when necessary, debunking viral content and emerging news. Those engaged in this work face the task of trying to counter the dubious content churned out by their colleagues and competitors alike. Debunking programs are scattershot and not currently rooted in effective practices that researchers or others have identified.

The result is that today online news media are more part of the problem of online misinformation than they are the solution. That's depressing and shameful. But it also opens the door to new approaches, some of which are taking hold in small ways across newsrooms.

A first, essential step toward progress is to stop the bad practices that lead to misinforming and misleading the public. I offer several practical recommendations to that effect, drawing upon research conducted for this report, as well as decades of experiments carried out in psychology, sociology, and other fields.

Another point of progress for journalists includes prioritizing verification and some kind of value-add to rumors and claims before engaging in propagation. This, in many cases, requires an investment of minutes rather than hours, and it helps push a story forward. The practice will lead to debunking false claims before they take hold in the collective consciousness. It will lead to fewer misinformed readers. It will surface new and important information faster. Most importantly, it will be journalism.

My hope is that news organizations will begin to see how they are polluting the information stream and that there is an imperative and opportunity to stop doing so. Organizations that already have good practices might also recognize that they can—and must—engage more with emerging news and rumors to help create real understanding and spread truth.

There is simply no excuse. We can and must do better.

II. Introduction: The New World of Emergent News

"It's out there," said Gawker Media founder Nick Denton. "Half of it's right. Half of it's wrong. You don't know which half is which." Denton was speaking to *Playboy* in an interview about today's news and information environment.[1]

Reaching well over one hundred million unique visitors a month, Denton's company is among the most popular and powerful of a new class of online media. The group's eponymous flagship site regularly aggregates content that is already being shared or discussed online, or has the potential to go viral. This leads Gawker to feature those "out there" rumors and unverified claims and stories Denton described.

Often, that content ends up being false, or is not what it first appeared to be.

"Part of our job is to make sure we're writing about things that people are talking about on the Internet, and the incentive structure of this company is organized to make sure that we are on top of things that are going viral," said John Cook, the then-editor in chief of Gawker in a subsequent discussion about unverified viral content. "We are tasked both with extending the legacy of what Gawker has always been—ruthless honesty—and be reliably and speedily on top of Internet culture all while getting a shit-ton of traffic. Those goals are sometimes in tension."[2]

Be they traditional publishers looking to gain a foothold online or the new cadre of online media companies, a wide range of news organizations feel this tension. What they share is an aspiration to plug into what's trending and gaining attention online, and reflect (and monetize) that with their digital properties.

At the same time, digital natives and legacy media alike all seek to build or maintain a trusted brand and to be seen as quality sources of information. Chasing clicks by jumping on stories that are too-good-to-check inevitably comes into conflict with the goal of audience loyalty.

Too often news organizations play a major role in propagating hoaxes, false claims, questionable rumors, and dubious viral content, thereby polluting the digital information stream. Indeed some so-called viral content doesn't become truly viral until news websites choose to highlight it. In jumping on unverified information and publishing it alongside hedging language, such as "reportedly" or "claiming," news organizations provide falsities significant exposure while also imbuing the content with credibility. This is at odds with journalism's essence as "a discipline of verification"[3] and its role as a trusted provider of information to society.

A source of the tension between chasing clicks and establishing credibility is the abundance of unverified, half-true, unsourced, or otherwise unclear information that constantly circulates in our real-time, digital age. It's a result of the holy trinity of widespread Internet access, the explosion of social networks, and the massive market penetration of smartphones.

Today, rumors and unverified information make their way online and quickly find an audience. It happens faster and with a degree of abundance that's unlike anything in the history of journalism or communication.

Rumors constantly emerge about conflict zones, athletes and celebrities, politicians, election campaigns, government programs, technology companies and their products, mergers and acquisitions, economic indicators, and

all manner of topics. They are tweeted, shared, liked, and discussed on Reddit and elsewhere. This information is publicly available and often already being circulated by the time a journalist discovers it.

What we're seeing is a significant change in the flow and lifecycle of unverified information—one that has necessitated a shift in the way journalists and news organizations handle content. Some of that shift is conscious, in that journalists have thought about how to report and deliver stories in this new ecosystem. Others, however, act as if they have not, becoming major propagators of false rumors and misinformation.

This paper examines the spread of unverified content and rumor in the online environment, and how newsrooms currently handle this type of information. It offers practical advice for better managing emerging stories and debunking the misinformation that is their inevitable byproduct. The intent of this report is to present best practices and data-driven advice for how journalists can operate in a digitally emergent environment—and do so in a way that helps improve the quality of confirmation, rather than degrade it.

The Opportunity and Challenge of Rumor

Journalists, by nature, love rumors and unverified information. Developing information tantalizes with the promise of not only being true, but also being as yet unknown on a large scale. It's hidden knowledge; it's a scoop.

At its best, rumor is the canary in the coal mine, the antecedent to something big. But it can also be the early indicator of a hoax, a misunderstanding, or a manifestation of the fears, hopes, and biases of a person or group of people.

Rumors and unverified information often lack context or key information, such as their original source. This presents enough of a pervasive issue for journalists today that a company like Storyful now exists (and was acquired

by News Corp). A social media newswire, Storyful employs journalists to sift through the mass of content on social networks to verify what's real and to keep their newsroom customers away from fake and unverified content.

One major challenge to emergent news is that humans are not well equipped to handle conflicting, ambiguous, or otherwise unverified information. Research detailed in this report shows that our brains prefer to receive information that conforms to what we already know and believe. The idea that a situation is evolving, still unformed, and perhaps rife with hearsay frustrates us. We want clarity, but we've been dumped into the gray.

The human and cognitive response to this is to do our best to make sense of what we're seeing and even of what we don't yet know. As a result, we retreat to existing knowledge and biases. We interpret and assimilate new information in a way that reinforces what we already believe, and we may invent possible outcomes based on what we hope or fear might happen. This is how rumors start. As inherently social beings, we seek to make sense of things together and to transmit and share what we know.

Today, as the saying goes, there's an app for that.

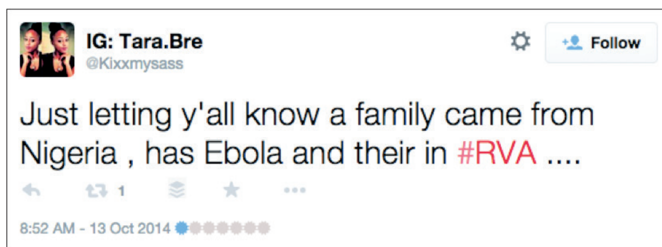
Need for Debunking

The recent outbreak of Ebola in West Africa, for example, unleashed a torrent of online rumors—some true and many false. In early October, a woman in the United Kingdom contacted me to note that she had just received this message via the messaging app WhatsApp:

> Ebola virus is now in the UK. PLEASE be very careful especially on public transports. Here are the list of hospitals that have ebola patients. Royal free hospital (north London). Newcastle upon Tyne hospital. Sheffield teaching hospital. royal Liverpool university hospital. Nurses are being infected too. Please BC to ur loved ones.

She said it came from a friend who is a nurse. At the time it was circulating, and at the time of this writing, there were no confirmed Ebola patients in the U.K. But fear of that possibility had birthed a rumor that was now spreading via at least one messaging app, and which could also be found on Facebook.

At roughly the same time that false message was circulating, people on Twitter were talking about a possible Ebola patient in Richmond, Virginia:



Virginia had recently tested two patients exhibiting Ebola-like symptoms. The tests were negative, and again, as of this writing, there are no confirmed Ebola cases in the state.

Later that same month, media outlets in New York began reporting claims that a doctor who had recently returned from West Africa was being treated as a possible Ebola case. On October 23, the *New York Post* published a story, “Doctor who treated Ebola patients rushed to NYC hospital”:

> A 33-year-old Doctors Without Borders physician who recently treated Ebola patients in Guinea was rushed in an ambulance with police escorts from his Harlem home to Bellevue Hospital on Thursday, sources said.[4]

That claim proved to be true.

The challenge today for newsrooms is to find new and better ways to do our work amidst this unprecedented onslaught of ambiguity and rumor, and to do so in a transparent way that brings clarity to fluid situations—if not clear answers. Our responsibility to source and publish information also means we must debunk false rumors, hoaxes, and misinformation. This is more important today than ever before.

When the World Economic Forum asked members of its Network of Global Agenda Councils to name the top trends facing the world in 2014, they listed "the rapid spread of misinformation online" in the first ten. It was named along with issues such as "inaction on climate change," "rising social tensions in the Middle East and North Africa," and "widening income disparities."[5]

"In this emergent field of study we need solutions that not only help us to better understand how false information spreads online, but also how to deal with it," wrote Farida Vis, a research fellow at the University of Sheffield, who is a member of the WEF Councils and has conducted research into the spread of online misinformation. "This requires different types of expertise: a strong understanding of social media combined with an ability to deal with large volumes of data that foreground the importance of human interpretation of information in context."[6]

Journalists play an important role in the propagation of rumors and misinformation. Vis cited research from the book *Going Viral* that underscores the importance of "gatekeepers" in helping spread information online. "These gatekeepers—people who are well placed within a network to share information with others—are often old-fashioned journalists or people 'in the know,' " Vis said.[7]

Our privileged, influential role in networks means we have a responsibility to, for example, tell people in Virginia that there are no confirmed cases of Ebola and to ensure we strongly consider when and how we propagate rumors and unverified information.

Not long after the WEF published its list of top trends for 2014, BuzzFeed's Charlie Warzel predicted another trend for the year. "If you've been watching Twitter or Facebook closely this month, you may have noticed the emergence and increasingly visible countercurrent: 2014, so far, is shaping up to be the year of the viral hoax debunk," he wrote. "It's a public, performative effort by newsrooms to warn, identify, chase down, and explain that . . . story you just saw—most likely on Facebook."[8]

He continued:

> Truth telling and debunking are fundamental journalistic acts, online or otherwise, but the viral debunk is a distinctive take on an old standby; it's a form-fitting response to a new style of hoax, much in same the way that Snopes and Hoax-Slayer were an answer to ungoverned email hoaxes, or that Politifact and FactCheck.org arose in response to a narrow, but popular, category of misinformation—false statements by public figures, uncritically amplified in the frenzy of political campaign.[9]

Warzel suggested this emerging practice was in reaction to a new breed of viral hoaxes that attract a huge number of social shares and pollute people's social feeds. Technology site The Verge also examined the problem of fake news and hoaxes in the fall of 2014 when Ebola hoaxes were rampant.

"On Facebook, where stories look pretty much the same no matter what publication they're coming from, and where news feeds are already full of panicked school closures, infected ISIS bogeymen, and DIY hazmat suits, the stories can fool inattentive readers into thinking they're real," wrote Josh Dzieza in his article, "Fake news sites are using Facebook to spread Ebola panic." In response, readers shared the story, "spreading the rumor farther and sending more readers to the story, generating ad revenue for the site."[10]

Dzieza pointed to an article from the fake news website NationalReport.net that falsely claimed an entire Texas town had been quarantined for Ebola. It quickly racked up over 130,000 likes and shares on Facebook. In research conducted for this paper, we identified five debunking articles from Snopes, *The Epoch Times*, and local Texas news outlets and discovered that, together, they achieved only a third of the share count of the panic-inducing fake.

Clearly, there is more work to be done in creating truly viral debunkings.

Filling the Gap

The importance and difficulty of addressing the spread of misinformation is arguably matched by a dearth of actionable data and advice for how to manage that task. This report presents quantitative and qualitative data to begin to fill that gap.

To gather data and information, I surveyed and interviewed journalists involved in covering real-time news and verifying emerging information—primarily information found on social networks.

I spoke with journalists, skeptics, and others who dedicate at least part of their time to debunking misinformation. This was all done in tandem with a review of the relevant scientific literature written by psychologists and sociologists over the last century about rumors, misinformation, and the challenges inherent in correcting misinformation.

I also worked with data journalist Adam Hooper and research assistant Joscelyn Jurich to create and populate a database of rumors reported in the online press. We used this database, dubbed Emergent, to power the public website Emergent.info, where people could see the rumors we were following and view the related data we were collecting.

The goal was to aggregate data that could offer a picture of how journalists and newsrooms report online rumors and unverified information. We also sought to identify false rumors that were successfully debunked, in the hope

of identifying the characteristics of viral debunkings, if such a thing exists. As noted above, we measured the effectiveness of these debunkings using social shares as a metric.

The goal of this work, along with capturing how news organizations handle the onslaught of unverified information, is to offer suggestions for how journalists can better report unverified information and deliver more effective debunkings. You'll find those covered most explicitly in the final chapter.

If "out there" is the new normal, then journalists and newsrooms need to be better equipped to meet the challenge of wrangling already-circulating stories. This work is a first step in that direction.

III. Literature Review: What We Know About the What, How, and Why of Rumors

a. Rumor Theory and the Press

It's a very direct offer: Pay us money and we'll give you rumors.

It works for ESPN. Rumors are a core part of the pitch for the outlet's *Insider* subscription. It promises members exclusive access to Rumor Central, a website section where ESPN lists and analyzes the latest rumors about teams, players, and other aspects of sports.[11]

ESPN isn't alone in monetizing and promoting rumor. The business and technology press thrive on hearsay—actively seeking out claims about earnings, new products, mergers and acquisitions, hirings and firings—to publish, sometimes with little sourcing. This is perhaps unsurprising given the old trader's adage that advises people to "buy the rumor, sell the fact." In the tech world, there's even a small industry built around Apple product rumors. Websites such as MacRumors, Cult of Mac, AppleInsider, the Boy Genius Report, and others compete to source and report rumblings about the next iPhone, iPad, or Apple Watch.

These claims aren't without effect. *A* 2014 study of merger rumors in the financial press found that "rumors in the press have large stock price effects."[12] Companies, like J.C. Penney, have seen their stock prices drop after

rumors took hold on message boards, the trading floor, Twitter, and elsewhere.[13] Researchers Kenneth R. Ahern and Denis Sosyura found that the "market overreacts to the average merger rumor, suggesting that investors cannot perfectly distinguish the accuracy of merger rumors in the press."[14]

One reason why investors are bad at capturing full rumor value, according to the co-authors, is that they "do not fully account for the media's incentive to publish sensational stories."[15] Sensational or not, rumors are a constant feature of journalistic work. Journalists seek out rumors, exchange them among themselves, and frequently report, propagate, and even directly monetize them.

To understand the larger context of the data in this paper about how online media handle rumors and unverified information, it's important to explore the broader history and dynamics of rumor. Psychologists, sociologists, and others have conducted research into the nature and cause of it for close to a century. Their work offers much in the way of helping journalists evaluate and appreciate why rumors are invented and spread, and the powerful role the press plays in allowing people to believe them.

Why We Rumor

In their exhaustive look at rumor research and scholarship, *Rumor Psychology: Social and Organizational Approaches*, psychologists and researchers Nicholas DiFonzo and Prashant Bordia define rumor as:

> . . . unverified and instrumentally relevant information statements in circulation that arise in contexts of ambiguity, danger, or potential threat and that function to help people make sense and manage risk.[16]

While theirs is a somewhat clinical definition, it communicates the key aspects of rumors: By their nature, they are unverified, emerge in specific contexts (danger, risk, etc.), and perform a distinct function.

Another characteristic of rumors is that they are communicated. They spread. "A rumor is not seated at rest inside an individual; it moves through a set of persons," wrote DiFonzo and Bordia. "A rumor is never merely a private thought. Rumors are threads in a complex fabric of social exchange, informational commodities exchanged between traders."[17]

They move by way of the technological means available and quickly adapt to new mediums. "Rumors readily propagate through whatever medium is available to them: word-of-mouth, email, and before email, even Xerox copies," wrote a group of researchers from Facebook in a study of rumor cascades on the social site.[18] "With each technological advancement that facilitates human communication, rumors quickly follow."[19]

Rumor, simply put, is one of the ways humans attempt to make sense of the world around them. (Journalists are arguably trying to perform a similar service for people, but with facts and evidence.) They are not an accident, a mistake, or something we can fully stamp out. They are core to the human experience. "[W]e are fundamentally social beings and we possess an irrepressible instinct to make sense of the world," wrote DiFonzo in a blog post for Psychology Today. "Put these ideas together and we get shared sense-making: We make sense of life together. Rumor is perhaps the quintessential shared sensemaking activity."[20]

Natural disasters, such as Hurricane Sandy or Hurricane Katrina, birth an enormous number of rumors; so does a mysterious country like North Korea. Around these situations, we are trying to understand what's happening but lack the information to do so. We engage in talk to help us better render what we cannot fully comprehend, what we don't know. Rumors emerge to help us fill in gaps of knowledge and information. They're also something of a coping mechanism, a release valve, in situations of danger and ambiguity.

Sociologist Tamotsu Shibutani outlined some of the situations that are ripe for rumor in his 1966 work *Improvised News: A Sociological Study of Rumor*. They include:

> . . . situations characterized by social unrest. Those who undergo strain over a long period of time—victims of sustained bombings, survivors of a long epidemic, a conquered populace coping with an army of occupation, civilians grown weary of a long war, prisoners in a concentration camp, residents of neighborhoods marked by ethnic tension . . .[21]

Shibutani said the distinction between news and rumor is that the former is always confirmed, whereas the latter is unconfirmed. (The data presented farther into this paper challenges that distinction.)

Given Shibutani's findings, it's not surprising that interest in the study of rumor gained momentum during the Second World War. Wartime, with its elements of fear, uncertainty, and secrecy is fertile ground for rumor.

Types of Rumors

In his 1944 study of wartime communication, R.H. Knapp analyzed more than 1,000 rumors. He categorized them in three ways, according to DiFonzo and Bordia. There were "dread rumors" (or "bogies"), which expressed fear of a negative outcome; "wish rumors" (also called "pipe-dream" rumors), which were the opposite; and "wedge-driving" rumors, which are "expressive of hostility toward a people-group."[22] Authors DiFonzo and Bordia note that a fourth category was added a few years later: "curiosity rumors," which are characterized by their "intellectually puzzling" nature.[23]

Which type of rumor have researchers found to be most prevalent? Sadly, it's the dread-based kind. At a time when "explainer journalism" has become a trend, thanks to sites such as vox.com, rumors often emerge to provide explanation and context for events. "In ordinary rumor we find a marked tendency for the agency to attribute *causes* to event, *motives* to characters, a *raison d'être* to the episode in question," (emphasis in original) wrote Gordon W. Allport and Leo Postman in *The Psychology of Rumor*.[24]

Along with sensemaking, “threat management” is a chief function of rumor. For people in dangerous or anxious situations, a rumor “rationalizes while it relieves.”[25]

But the rumor mill can also cause panic, riots, and civil disorder. DiFonzo and Bordia recounted the outcome of a rumor in 2003 during the outbreak of SARS:

> False rumors that Hong Kong had been an area infected by severe acute respiratory syndrome (SARS) caused widespread panic there . . . Telephone networks became jammed with people spreading the rumor, which resulted in bank and supermarket runs.[26]

Rumor Propagation

The stories we make up, the rumors we invent and spread, say something about our current situations. In this respect, rumors are valuable because, even when false, they reveal larger truths. They show what we think, fear, and hope. They are windows into our state of mind and beliefs. “[F]ar from being merely idle or malicious gossip, rumor is deeply entwined with our history as a species,” wrote Jesse Singal in a 2008 *Boston Globe* article examining how the Obama and McCain campaigns were working to quash rumors during the election process. “It serves some basic social purposes and provides a valuable window on not just what people talk to each other about, but why. Rumors, it turns out,” Singal continued, “are driven by real curiosity and the desire to know more information. Even negative rumors aren’t just scurrilous or prurient—they often serve as glue for people’s social networks.”[27]

The above reference to social networks relates to the person-to-person type, rather than Facebook and Twitter. But it reinforces that new digital networks amplify and accelerate a process that has existed as long as we humans have.

This is one area where it's important to distinguish between rumor and gossip. If rumor is about sensemaking, then gossip is about social evaluation and maintenance. According to DiFonzo and Bordia, "Rumor is intended as a hypothesis to help make sense of an unclear situation whereas gossip entertains, bonds and normatively influences group members."[28] That's why rumors, rather than gossip, are more closely linked with the press—given their connection to larger events. Hence why journalists often find themselves in roles of rumor propagators.

In his book *On Rumors*, Cass Sunstein summarized the four types of rumor propagators:

1. **Narrowly self-interested:** "They seek to promote their own interests by harming a particular person or group."

2. **Generally self-interested:** "They may seek to attract readers or eyeballs by spreading rumors."

3. **Altruistic:** "When starting or spreading a rumor about a particular individual or institution, propagators often hope to help the cause they favor."

4. **Malicious:** "They seek to disclose and disseminate embarrassing or damaging details, not for self-interest or to promote a cause, but simply to inflict pain."[29]

Most would characterize the online press as generally self-interested rumor propagators. They spread rumors because they expect to gain traffic or attention. The viral stories analyzed later in this report, including the Florida woman who claimed to have had a third breast implanted, offer little, if any, public or information value beyond being funny or shocking. Press outlets cover and propagate these stories because they attract eyeballs and promote social shares. They typically fit into the category of curiosity rumors.

Of course, journalists can also have altruistic goals. They want to bring important, relevant, or otherwise noteworthy information to the attention of the public. Finally, there's also an argument to be made that journalists engage in narrowly self-interested and malicious propagation, though these more extreme cases are less common.

The above categories of propagators are useful to help journalists analyze their motivations for publishing unconfirmed stories. They also provide journalists with a framework to assist in evaluating the veracity of rumors and to examine why a rumor spreads among a specific group of people. The bottom line is that journalists should always evaluate the motivations of those engaged in rumor-mongering—including themselves.

Rumor Relevance and Veracity

Along with the motivations of a propagator, it's also important to consider his or her connection to the given topic of a rumor. The more we care about a topic, or have a stake in it, the more likely we are to engage in its creation and spread. (Another element revealed in rumor research is the idea of imminent threat; if we feel that a rumor helps raise awareness about a threat, we are more likely to pass it along.)

Simply put, we're more likely to spread a rumor if it has personal relevance. In a 1991 article for *American Psychologist*, rumor researcher Ralph Rosnow wrote that "rumor generation and transmission result from an optimal combination of personal anxiety, general uncertainty, credulity, and outcome-relevant involvement."[30] DiFonzo and Bordia similarly noted, "People are uncertain about many issues, but they pursue uncertainty reduction only on those topics that have personal relevance or threaten the goal of acting effectively."[31]

Another element of rumor propagation relates to veracity. People are more likely to transmit a rumor if they believe it to be true. This is because we innately understand the negative reputational effects that come with being

a source of false information. "Possessing and sharing valued information is also a way to heighten status and prestige in the view of others in one's social network," said DiFonzo and Bordia.[32] Research has found that "a reputation as a credible and trustworthy source of information is vital for acceptance in social networks."[33]

Both of the above quotes easily apply to journalists. Possessing valued information (scoops or new facts) heightens our status. Being seen as reputable and credible also raises our standing. The former explains why we might be inclined to push forward with rumors, while the latter provides reason for us to be more cautious.

In the end, however, it's often the case that heedfulness gives way to the press' desire to be seen as valuable, singular authorities. Perhaps no recent news story highlighted the tendency to seek shared sensemaking and threat management better than the disappearance of Malaysia Airlines Flight MH370.

Rumor and the 24-hour News Cycle

When MH370 went missing in March of 2014, it created a perfect storm of rumor-mongering in the press. A plane carrying 239 people vanished somewhere (presumably) in the Indian Ocean.

This was an event that captured global attention. It was characterized by fear and a remarkable lack of real information: about where the plane was, why it crashed, who was responsible, and how a large jet could simply disappear in an age of radar and other advanced technology.

This set off a never-ending news cycle in which journalists sought out any piece of information or expert opinion, no matter how dubious, to aid in the process of making sense of the situation.

The drive to fill the empty space with something—particularly on cable news—was partly human nature, and also partly dependent on the need to meet the public's insatiable demand for information. All of us—journalists and the public—sought to understand what had happened. But facts were sparse. So we engaged in collective sensemaking and rumor propagation to fill the void.

"On CNN, the plane rises from misty clouds accompanied by an eerie background score while anchors offer intriguing details—some new, some days old—of the disappearance of Flight 370," wrote Bill Carter, *The New York Times*' television reporter, in an article about cable news coverage of the story. "The reports, broadcast continually, often are augmented by speculation—sometimes fevered, sometimes tempered—about where the flight might have come to rest. And viewers are eating it up."[34]

CNN more than doubled its audience in the two weeks after the plane first disappeared.[35] People wanted information, and CNN dedicated seemingly every minute to the plane story. It also struggled to fill the void with real information. At times, segments were based largely on getting people to offer theories about what had happened. It was an invitation for rumor and speculation. This is a sample exchange from a CNN broadcast on March 11, just days after the plane disappeared (emphasis added):

> RICHARD QUEST, CNN: . . . **So, many questions, none of which, frankly, we're going to be able to answer for you tonight.** But many questions are raised by this new development. For instance, not least, how can a plane go like this and no one notices it's off flight plan?
>
> The former director general of IATA says he finds it incredible that fighter jets were not scrambled as soon as the aircraft went off course. **I asked Giovanni Bisignani for his gut feeling about what happened to the plane.**

> GIOVANNI BISIGNANI, FORMER DIRECTOR GENERAL, IATA: It is difficult to imagine a problem in a structure failure of the plane. The Boeing 777 is a modern plane, so it's not the case. It's not a problem of a technical problem to an engine because in that case, the pilot has perfectly (sic) time to address this and to inform the air traffic control.[36]

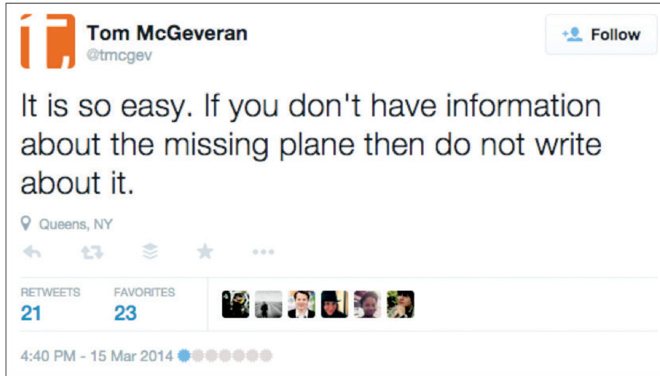
CNN was often accused of being the worst offender when it came to overcoverage and rampant speculation. Longtime CNN host Larry King told Capital New York that he had "learned nothing," from the channel's reporting about the story and that "all that coverage has led to nothing." He then called the coverage "absurd."[37]

CNN was not alone in its rumor propagation, however. Many other outlets also engaged. There were soon an abundance of theories and rumors circulating, ranging from the plane's landing in Nanning, China[38] or North Korea,[39] to its having been taken over by Iranian terrorists.[40] In Carter's *Times* article, Judy Muller, a former ABC correspondent and now a professor of journalism at the University of Southern California, characterized the combination of information-seeking, sensemaking, and news-cycle pressures that came together in the story:

> I fear I am part of the problem. I keep tuning in to see if there are any new clues . . . Of course, endless speculation from talking heads soon defines the coverage and that can lead to the impression that these folks know something when what they really know is that they have a 20-minute segment to fill.[41]

Infinite time to fill (or space online) plus a lack of real information about a global news event rife with uncertainty caused journalists to inundate the void with a constant stream of sensemaking and threat management in the

form of "expert" commentary and imagined scenarios. Tom McGeveran, a co-founder of Capital New York, expressed his frustration with the onslaught of rumor and speculation in a tweet:



But given the inmate human processes at play in the creation and spread of rumors, that's often truly easier said than done for the press.

Rumor and Belief

What makes us believe a rumor? And how do we evaluate its accuracy, if at all?

This is an important aspect of rumor. Evidence supports a connection between repetition and belief. "Once rumors are current, they have a way of carrying the public with them," wrote R.H. Knapp in his 1944 study of wartime rumors. "Somehow, the more a rumor is told, the greater its plausibility."[42] This presents a significant challenge to journalists' ability to debunk false rumors, as I'll detail in the third section of this chapter.

Another factor that aids in the believability of rumor specifically relates to the press. One study found "rumors gained plausibility by the addition of an authoritative citation and a media source from which the rumor was supposedly heard."[43]

The source of a rumor is important, as is the frequency with which it is repeated, and any additional citations that seem to add to its veracity. The ability to cite a media source provides ammunition for rumor propagation. This concept illustrates how important it is for journalists and news organizations to think about which rumors they choose to repeat and how they do so.

In summarizing what leads to belief in rumors, DiFonzo and Bordia listed four factors, as well as a set of "cues" that people use to evaluate rumor accuracy:

> . . . rumors are believed to the extent that they (a) agree with recipients' attitudes (especially rumor-specific attitudes), (b) come from a credible source, (c) are heard or read several times, and (d) are not accompanied by a rebuttal. Cues follow naturally from these propositions: How well does the rumor accord with the hearer's attitude? How credible is the source perceived to be? How often has the hearer heard the rumor? Has the hearer not been exposed to the rumor's rebuttal?[44]

These evaluations take place in the moments when we hear and process a rumor. It's a rapid-fire assessment that mixes cognitive and emotional factors—and any evidence of media participation in the rumor can be a factor in what we ultimately choose to believe.

With the emergence of digital social networks, our instant evaluation of a rumor can now be followed by a remarkably powerful act of push-button propagation. Once we decide that a rumor is worth propagating, we can do so immediately and to great effect. This is particularly true when it comes to journalists and news organizations, as they have access to a larger audience

than most. By giving a rumor additional attention in its early, unverified stage, they add credibility and assist in its propagation, which itself has an effect on belief.

"Rumors often spread through a process in which they are accepted by people with low thresholds first, and, as the number of believers swells, eventually by others with higher thresholds who conclude, not unreasonably, that so many people cannot be wrong," wrote Sunstein.[45] The result can be the rapid spread—and increased belief in—online misinformation.

b. The Power of Misinformation

She was dressed in fatigues with a rifle at her side. The camera focused as she smiled and flashed the "v" sign while surrounded by other fighters. She would soon be known as Rehana, the "Angel of Kobane."

Her name and image came to global attention beginning on October 13, 2014, when an Indian journalist/activist named Parwan Durani tweeted that the woman in the photo, whom he called Rehana, had killed more than

100 Islamic State fighters.[46] Durani called for people to retweet his message to celebrate her bravery. Nearly 6,000 did, and soon news articles began reporting the remarkable story of Rehana, the ISIS slayer.

Not long after, ISIS supporters claimed that she had been killed. Social media accounts sympathetic to ISIS began circulating an image of a fighter holding a decapitated female head. They claimed it was Rehana.

Once again, the press picked up the story, this time to mourn her apparent death. "Poster girl for Kurdish freedom fighters in Kobane 'captured and beheaded by ISIS killers' who posted gruesome pictures online," read a *Daily Mail* digital headline.[47] Business Insider reported something similar: "On October 27, rumors began to spread on social media that a Kurdish female fighter known by the pseudonym Rehana may have been beheaded by Islamic State (ISIS) militants in Kobani."[48] Others, such as the *Daily Mirror*, news.com.au, *Metro UK*, and Breitbart, reported the rumor of her death, citing the tweets as potential evidence. The story moved quickly, with some questioning whether the ISIS image was real and whether the head really belonged to Rehana. Many dismissed it as propaganda.

The *Daily Mirror*'s story, for example, included a denial:

> She is said to have killed more than 100 jihadists in the battle for the strategically important town of Kobane, on the Turkey-Syria border.
>
> Now IS has claimed that a photo of a grinning rebel holding a woman's severed head is evidence that she is dead.
>
> But Kurdish journalist Pawan Durani said it was untrue.
>
> He wrote today: "Rehana is very much alive. ISIS supporters just trying to lift morale."[49]

Durani, of course, is not a Kurdish journalist and there is no evidence he had direct content with, or information about, Rehana. But that is the least of the concerns about the overall story. The question of whether she had

ever been fighting ISIS and, in fact, if her name was actually Rehana soon eclipsed the issue of her alleged murder. The story had captured massive attention but seemed entirely based on falsities.

Swedish journalist Carl Drott is perhaps the only Western journalist to have met the woman in question. He felt compelled to set the record straight after her initial story began to take hold. Writing on Facebook, Drott noted it was "very unlikely" that she had killed 100 ISIS fighters, since she is a member of an auxiliary unit that does not go to the front. "I met her during the ceremony when the unit was set up on 22 August," he wrote. "The purpose of such units is primarily to relieve YPG/YPJ ("the army") and Asayish ("the police") of duties inside Kobani town, e.g. operating checkpoints."[50]

The BBC tracked the evolution of the Rehana story and confirmed Drott's account that the image circulating was originally taken in August.[51] "The following day [in August], this image was posted on the blog 'Bijikurdistan' which supports the Kurdish effort in Kobane," reported the BBC. "It then seems to have gone largely unnoticed until it was shared on Twitter over a month later by an English-language news outlet based in the Kurdish region, Slemani Times.[52] That is when the stories and mystery around her began building up on social media."[53]

Then in October came the tweet from Durani—and a legend was born.

In his post, Drott said Rehana is not a common Kurdish name and he had no idea how it came to be given to the woman in the photo. He said he never caught her name when they briefly spoke in August. Drott reflected on how the photo took on a life of its own:

> She volunteered to defend Kobani against the Islamic State and risk her life. It's an affront to her that some people think that's not enough, but that more fantastic details have to be invented, and it also devalues the very many completely true and even more fantastic stories coming out of Kobani. Unfortunately, there's not an iconic picture for every fantastic story, and vice versa.[54]

With only a handful of stories that examined the contradictions and false claims around the Rehana story, for the most part it's one example of how narratives are invented, picked up, and spread in today's information ecosystem. The simple story of the attractive Kurd who killed dozens of ISIS fighters is a powerful wish rumor. Add in a compelling image and it's perfect for propagation on social networks. The result is that most of us will never know the woman's true story—and the press bears a level of responsibility for that.

In today's networked world, misinformation is created and spreads farther and faster than ever before. Research finds that attempts to correct mistaken facts, viral hoaxes, and other forms of online misinformation often fall short. Thus, our media environment is characterized by persistent misinformation.

New York Times technology columnist Farhad Manjoo is the author of *True Enough: Learning to Live in a Post-Fact Society*, a detailed look at related scholarly research and examples of misinformation in our increasingly connected world. "People who skillfully manipulate today's fragmented media landscape can dissemble, distort, exaggerate, fake—essentially, they can lie—to more people, more effectively, than ever before," Manjoo wrote.[55]

The ranks of these people are growing, and so too is their impact, thanks to a combination of social networks, credulous online media, and the way humans process (mis)information.

Networks Don't Filter for Truth

"False information spreads just like accurate information," wrote Farida Vis, a Sheffield University research fellow, in an article examining the challenges of stopping online misinformation.[56] Networks don't discriminate based on the veracity of content. People are supposed to play that role.

"Online communication technologies are often neutral with respect to the veracity of the information," said the group of researchers from Facebook in their paper looking at rumor cascades on the network. "They can facilitate the spread of both true and false information. Nonetheless, the actions of the individuals in the network (e.g., propagating a rumor, referring to outside sources, criticizing or retracting claims) can determine how rumors with different truth values, verifiability, and topic spread."[57]

Another factor that determines the spread of misinformation is the nature of the information itself. Falsehoods are often more attractive, more shareable, than truth. "It's no surprise that interesting and unusual claims are often the most widely circulated articles on social media. Who wants to share boring stuff?" wrote Brendan Nyhan, a professor of political science at Dartmouth who has also conducted some of the best research into political misinformation and the attempts to correct it.[58]

Writing for *The New York Times*, Nyhan said, "The spread of rumors, misinformation and unverified claims can overwhelm any effort to set the record straight, as we've seen during controversies over events like the Boston Marathon bombings[59] and the conspiracy theory[60] that the Obama administration manipulated unemployment statistics."[61] (Nyhan was writing about the research project that led to this paper.)

One challenge Nyhan noted is that a fake story, or an embellished version of a real one, is often far more interesting and more shareable than the real thing. Whether it's the Angel of Kobane, a fake news story about a Texas town under Ebola quarantine, or a Florida woman's claim that she's had a third breast implanted (more on that later in this paper), these narratives are built to appeal to our curiosity, fears, and hopes. They target the emotions and beliefs that cause us to treat things with credulity—and to pass them on.

Emma Woollacott, a technology journalist writing for Forbes, put it well:

> Who doesn't feel tempted to click on a picture of an Ebola zombie or a story of a miracle cure? And even if you don't actually like or share the story, your interest is still noted by a plethora of algorithms, and goes to help increase its visibility. The irony is that false stories spread more easily than Ebola itself—despite what you may have read elsewhere.[62]

Stanford professor, urban-legend researcher, and bestselling business book author Chip Heath argued in "Emotional Selection in Memes: The Case of Urban Legends" that "rumors are selected and retained in the social environment in part based on their ability to tap emotions that are common across individuals."[63]

Sites like Upworthy depend on this in order to make the content they curate spread. (Upworthy employs researchers to fact-check content before it's promoted.) They work to inspire an emotional reaction. For example, Heath found that rumors evoking feelings of disgust are more likely to spread.

Just as networks don't filter for true and false, the same can be said for our brains. When information conforms to existing beliefs, feeds our fears, or otherwise fits with what we think we already know, our level of skepticism recedes. In fact, the default approach to new rumors is to give them a level of credence. "Even when the hearer is generally skeptical, most situations don't seem to call for skepticism," wrote DiFonzo in *Psychology Today*. "Most of the time, trusting what other people tell us works for us, lubricates social relationships, bolsters our existing opinions, and doesn't result in an obvious disaster—even if it is just plain wrong." He continued, "Indeed, civilization generally relies on our tendency to trust others—and we tend to punish those who are caught violating that trust."[64]

Misinformation often emerges and spreads due to the actions and mistakes of well-meaning people (including journalists). But there are also those engaged in the conscious creation and spread of falsehoods.

Misinformation Ecosystem

There is a growing online misinformation ecosystem that churns out false information at an increasing pace. Its success often depends on two factors: the ability to cause sharing cascades on social networks and the ability to get online media to assist in the propagation, thereby adding a layer of credibility that further increases traffic and sharing.

This ecosystem has, at its core, three actors.

1. Official Sources of Propaganda

The story of Rehana is, in part, a story of propaganda. As of this writing, it's unknown exactly where the claim of her killing 100 ISIS fighters originated (though we know when it took hold on Twitter). That apparently false claim is a powerful piece of propaganda against ISIS and in favor of the Kurds. In turn, the Islamic State met this piece of anti-ISIS propaganda with its own response—a false claim that its fighters had beheaded Rehana.

Warring sides have always used propaganda to spread fear and doubt. Today, they do so online. After Malaysia Airline's flight MH17 was shot down over Ukraine in July, the Russian government made many attempts to place the blame on Ukrainian forces for downing the jet. Meanwhile, investigators such as Eliot Higgins, who goes by the pseudonym Brown Moses, gathered evidence from online sources to show that the Buk missile launcher that took down the jet came from Russia. In response, Russia engaged in an effort to refute the claim by creating its own "evidence" and seeding it online.

"Faced with evidence that its proxies in Ukraine had committed a terrible crime, Russian officials tried to turn the tables with a social media case of their own," wrote journalist Adam Rawnsley in a post for Medium.[65] (Rawnsley has worked for The Daily Beast and also written for *Wired* and *Foreign Policy*.)

Russian officials said that a YouTube video showing the Buk in fact revealed that it was in Ukrainian territory. "Russia pushed back on the claims, arguing that a blow-up image of the billboard showed an address in Krasnoarmeysk, a town in Ukrainian government control—the implication being that Buk was Ukrainian, not Russian," Rawnsley wrote.[66]

Though the Kremlin claims were false, the government still managed to activate a network of sympathetic supporters and media outlets to propagate its refutation. Often, networks of fake accounts set up on Twitter help push out one side's view.

Rawnsley quoted Matt Kodama, vice president of products at Recorded Future, which enables people to analyze large data sets (and has been funded by the CIA's venture arm):

> [In] a lot of these hoax networks, all the accounts will pop up all at the same time and they'll all be following each other. But if you really map out how the accounts relate to each other, it's pretty clear that it's all phony.[67]

2. Fake News Websites

Satirical news sites such as *The Onion* and *The New Yorker*'s Borowitz Report are built on producing fake takes on real events and trends. However, these sites often have prominent disclaimers about the satirical nature of their content. (Of course, people still end up being fooled, as the website Literally Unbelievable shows.)[68]

But a new breed is emerging: websites that often don't disclose the fake nature of their content and aren't engaged in satirical commentary at all. Instead, they churn out fake articles designed and written to present as real news. They do it to generate traffic and shares and to collect ad revenue as a result. These sites have official sounding names, such as The Daily Currant, National Report, Civic Tribune, World News Daily Report, and WIT Sci-

ence. "These sites claim to be satirical but lack even incompetent attempts at anything resembling humor," wrote Josh Dzieza in an article about Ebola hoaxes for The Verge. "They're really fake news sites, posting scary stories and capitalizing on the decontextualization of Facebook's news feed to trick people into sharing them widely."[69]

Perhaps the worst offender is NationalReport.net. It offers no disclosure about its fake nature anywhere on the site and it regularly publishes articles that make alarming false claims.

When Ebola arrived in the United States, National Report soon began issuing daily stories about infections. At one point, it claimed that the town of Purdon, Texas had been quarantined after a family of five was infected with Ebola.[70]

The story read like a real news report, replete with comment from a source at a local hospital:

> A staff member at the Texas Health Presbyterian Hospital, who wished to remain anonymous, contacted National Report with a short statement about the Ebola situation in Texas. We were told the following.
>
> "As far as we know, Jack Phillis had not come in contact with either the late Thomas Duncan or Mrs. Phan. It is perhaps possible that he was within a close proximity of the infected parties, but it is otherwise unknown as to how Phillips was infected with Ebola."

The article invited readers to follow live tweets from the scene from Jane M. Agni, its reporter. Her bio, which is of course fake, says she is the author of *The States Of Shame: Living As A Liberated Womyn In America* and that the book "appeared on Oprah's Book Club."[72] Agni is also listed as a writer for two other related fake websites, Modern Woman Digest[73] and Civic Tribune.[74]

National Report published other Ebola stories, including, “Ebola Infected Passenger Explodes Mid-Flight Potentially Infecting Dozens.” To add credibility to that story, the site included a fake comment on the article from the supposed pilot of the flight:

> I was the pilot for this flight and there is (sic) a few discrepancies in the story. Yes, the woman did pass away, and it is true that she tested positive for the ebola virus. However, she did not “explode” as your article implies. When her organs liquified, they fell out onto the floor of the plane, which resulted in a splashing sound. None of the other passengers (to my knowledge) were hit with any of her bodily fluids. Only the people in the read (sic) cabin are being held for testing, as that is where the woman in question was seated.[75]

The owner of the site goes by the pseudonym Allen Montgomery. He believes he’s acting in the public interest. “We like to think we are doing a public service by introducing readers to misinformation,” he told Digiday. “As hard as it is to believe, National Report is often the first place people actually realize how easily they themselves are manipulated, and we hope that makes them better consumers of content.”[76]

In an email to me, Montgomery said he created the site to understand online misinformation and virality. “I became aware of the feeding frenzy of misinformation on the fringe of the right wing years ago (along with the rise of the Tea Party) and wanted to learn more about how they were able to build such large and loyal followers who disseminated their information across the net while seeming to suspend reason,” he said. “As a news junkie myself, I figured I would throw my hat in the game and see how easily it was to infiltrate the fringe and sadly, it wasn’t difficult.”

Montgomery complained that he gets “the most vile death threats on a daily basis,” but said the hostility is misdirected. “I often tell them, to put it in rapper terms, ‘Don’t hate the player, hate the game,’ ” he wrote. “I myself am a player in a game that I hate.”

The reality is that Montgomery and others push out fake news every day, and they generate tens of thousands of shares, driving traffic that can reach more than one million uniques per month, according to Quantcast data on National Report.[77] Ricardo Bilton, the author of the Digiday article, believes that the site is part of a bigger problem and ecosystem. "In reality, the site has placed itself at the center of a media environment that actively facilitates the spread of misinformation," he wrote. "It's really just a symptom of larger problems."[78]

3. Individual Hoaxsters

Montgomery's claim that he's trying to expose the problems with online media and social networks is the same motivation declared by a solo hoaxster who prefers to work primarily on Twitter. On that network, Tommasso Debenedetti has impersonated the Russian defense minister, the Italian prime minister, Vatical official Cardinal Tarcisio Bertone, North Korean leader Kim Jong-Un, and former Afghan leader Hamid Karzai, among others. He cycles through fake accounts, bringing his followers with him when he can, tweeting out fake news reports. His goal is to get journalists to spread the news.

"Social media is the most unverifiable information source in the world but the news media believes it because of its need for speed," he told *The Guardian* in 2012.[79] Debenedetti says his day job is as a school teacher in Italy. But his passion is for fakery—and fooling the media.

Before he moved to Twitter, he wrote fake interviews with famous people and sold them to credulous Italian newspapers. *The New Yorker* outed him for this in 2010, but not before he'd sold and published fake interviews with Philip Roth, Mikhail Gorbachev, and the Dalai Lama.[80]

"I wanted to see how weak the media was in Italy," he told *The Guardian*. "The Italian press never checks anything, especially if it is close to their political line, which is why the rightwing paper *Libero* liked Roth's attacks on Obama."[81]

Debenedetti is among the most dedicated and prolific of online hoaxsters, but many others crop up. There was the British teenager who convinced thousands of Twitter followers, and some professional athletes, that he was a prominent football writer for *The Daily Telegraph* and other publications.[82]

And there are people who use major events, such as Hurricane Sandy, as opportunities to push out false information, like this person (who, it turned out, worked in New York politics):

Journalists and news organizations soon began distributing this claim, many of them failing to offer any attribution:

If it's newsworthy, such as the report of flooding at the NYSE, at least a few journalists are likely to jump on it prior to practicing verification. If one (or more) credible outlet moves the information, others are quick to pile on, setting off a classic information cascade. When a rumor or claim starts generating traffic and gets picked up by other media outlets, then it's even more likely journalists will decide to write something.

The danger, aside from journalists becoming cogs in the misinformation wheel, is that it's incredibly difficult to make corrections go just as viral.

Failure of Corrections

Two bombs went off near the finish line of the Boston Marathon on April 15, 2013. In the ensuing hours, as people tried to understand what had happened, many items of misinformation were birthed and spread. Famously, there were attempts on Reddit to examine photos and other evidence to pinpoint those responsible. (That effort is the subject of a case study in a forthcoming Tow paper by Andy Carvin.)

Media outlets made mistakes. In some cases, they incorrectly reported that a suspect was in custody. *The New York Post* famously published a cover showing two young men who had been at the marathon and labeled the pair, "BAG MEN," reporting that the FBI was looking for them. (The newspaper later settled with them for an undisclosed amount.)

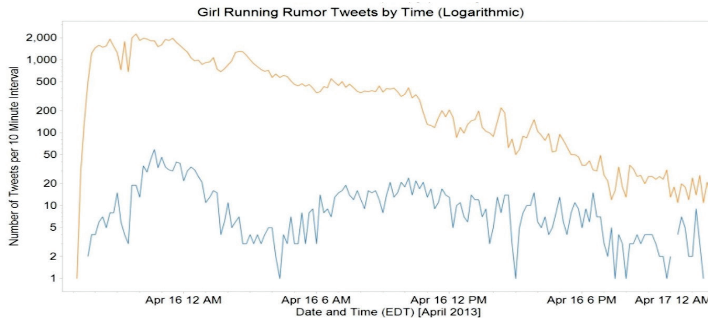
A group of researchers investigated one false rumor claiming that one of the victims was an eight-year-old girl who had been running the race. (An eight-year-old boy had been at the marathon as a spectator, and he was killed in the blasts.) The rumor about the young girl began not long after news of the boy's death became public. At least one Twitter user, @TylerJWalter, appeared to conflate the two, tweeting, "An eight year old girl who was doing an amazing thing running a marathon, (sic) was killed. I can't stand our world anymore."

Then another Twitter user, @_Nathansnicely, tweeted the same information, along with a picture of a young girl: "The 8 year old girl that sadly died in the Boston bombings while running the marathon. Rest in peace beautiful x http://t.co/mMOi6clz21." (These tweets are no longer online.)

From there, the rumor began to spread.

Researchers from the University of Washington and Northwest University studied the dissemination of three false rumors associated with the Boston bombings. Their paper, "Rumors, False Flags, and Digital Vigilantes: Misinformation on Twitter after the 2013 Boston Marathon Bombing," offers a look at how difficult it is to get corrections to spread as widely (and via the same people) as the initial rumor.[83]

With regard to the rumor of the eight-year-old girl, they captured 90,668 tweets that referenced it as true. There were only 2,046 tweets that offered corrective information, "resulting in a misinformation to correction ratio of over 44:1."[84] The graph below from their paper illustrates the spread of misinformation versus corrections on Twitter. (Misinformation is the top orange line, the corrections are the lower blue line.)



"Perhaps the most troublesome aspect of the graph shows misinformation to be more persistent, continuing to propagate at low volumes after corrections have faded away," they wrote.[86]

The researchers studied two other examples of misinformation that spread in the wake of the bombing. One example, which claimed the U.S. government had a role in the blasts, resulted in 3,793 misinformation tweets and 212 corrections.

The final false rumor study related to claims that Brown student Sunil Tripathi was one of the bombers. Regarding this, they identified 22,819 misinformation tweets and 4,485 correction tweets. This example was somewhat encouraging in that correction tweets eventually overtook the misinformation in terms of longevity, though certainly not in overall numbers.

When officials named the Tsarnaev brothers as suspects, the third rumor reached a turning point, according to the researchers. This served to amplify the trend toward correction that had begun prior to the announcement. "For this rumor, corrections persist long after the misinformation fades as users commented on lessons learned about speculation," they wrote.

This final example aligns with a common piece of advice offered to those trying to debunk misinformation: Present an alternate theory. In this case, the emergence of the Tsarnaev brothers as viable suspects helped blunt the spread of the Tripathi rumor.

Still, the Boston bombings research evidences that there are more tweets about misinformation than correction. Another recent paper examined whether misinformation and correction tweets come from the same people and clusters. Meaning: Do people who tweet (and see tweets with) misinformation also get exposed to the corrections? Unfortunately, they do not.

At the Computational Journalism symposium held in The Brown Institute for Media Innovation at Columbia University in late October of 2014, Paul Resnick and colleagues from the University of Michigan School of Information presented a paper about a rumor identification system called "RumorLens." It included a case study that examined whether people who were exposed to a false rumor were also exposed to its correction.

They chose to study a false report about the death of musician Jay-Z. The researchers determined that 900,00 people "were followers of someone who tweeted about this rumor."[87] They found that 50 percent more people were exposed only to the rumor, as opposed to those who saw its correction. Overall, they concluded, "People exposed to the rumor are rarely exposed to the correction."[88] Moreover, they found that the audiences for the rumor and the correction were "largely disjoint."[89]

A final data point comes from the previously mentioned Facebook study. Part of that research examined what happens to the spread of a rumor on Facebook after it has been "snoped." Something is considered snoped when someone adds a link from Snopes.com to the comment thread of a rumor post. (The link could be debunking or confirming the rumor, as the rumor-investigating website does both.)

One encouraging conclusion in the Facebook research was that true rumors were the "most viral and elicited the largest cascades" after being snoped. However, the news was far less encouraging for false rumors and those with a mixture of true and false elements. The Facebook researchers found that "for false and mixed rumors, a majority of re-shares occurs after the first snopes comment has already been added. This points to individuals likely not noticing that the rumor was snoped, or intentionally ignoring that fact."[90]

Misinformation is often more viral and spreads with greater frequency than corrective information. One reason for this is that false information is designed to meet emotional needs, reinforce beliefs, and provide fodder for our inherent desire to make sense of the world. These powerful elements combine with the ways humans process information to make debunking online misinformation a significant challenge, as I'll detail in the next section.

c. The Debunking Challenge

Bendan Nyhan was hoping for some good news, but what he found was largely depressing.

Nyhan is a professor at Dartmouth College who researches political misinformation and the attempts to correct it. He is also a regular contributor to *The New York Times* blog The Upshot and is a former contributor to the *Columbia Journalism Review*.

Some of his research has attempted to identify ways to effectively tackle misinformation. But Nyhan often ends up with findings that reinforce the painful truth: It is incredibly difficult to debunk misinformation once it has taken hold in people's minds.

This was never more obvious than in a 2014 study Nyhan conducted in an area of persistent misinformation: vaccines. The study, published in the American Medical Association journal *Pediatrics*, tested different ways of communicating information about vaccines to more than 1,700 parents via a web survey. Participants were shown a range of information and content about the safety and benefits of vaccines, including images of children with diseases that are prevented by the vaccines, a narrative about a child who almost dies from measles, and a collection of public health information. The goal was to identify if one or more approaches were effective in convincing parents who are skeptical of vaccines to change their minds.

Now for the depressing part: Nyhan and his colleagues found that "parents with mixed or negative feelings toward vaccines actually became less likely to say they would vaccinate a future child after receiving information debunking the myth that vaccines cause autism."[91] When given the facts, in various ways, these people actually moved further away from vaccines. This behavior has been shown to happen time and again in research related to political issues and other topics. Present someone with information that contradicts what they know and believe, and they will most likely double

down on existing beliefs. It's called the backfire effect and it's one of several human cognitive factors that make debunking misinformation difficult. The truth is that facts alone are not enough to combat misinformation.

The previous section of this paper examined the persistence and creation of misinformation and the failure to get corrections to spread. This section shows that even if we can tackle the challenge of making truth as interesting as fiction, we are greeted by another significant obstacle: our brains. Our preexisting beliefs, biases, feelings, and retained knowledge determine how we process (and reject) new information.

Our Stubborn Brains

There is, of course, a distinction to be made between information that speaks to deeply held beliefs, such as one's political views, and information that doesn't have as much at stake for the recipient. An example of the latter might be a viral news story about an Australian man who said that a spider burrowed its way into a scar in his chest while he vacationed in Bali.[92] Most people react emotionally to this story. It's a powerful mixture of curiosity fused with disgust—and therefore highly shareable. But readers wouldn't have a strong stake in whether it was true or not. They would presumably be open to subsequently learning that it was most likely not a spider in his chest, as that insect has never been documented to burrow under the skin. But there remain cognitive challenges.

One difficulty is that once we learn something, or have it stored in our brains, we are more likely to retain it intact. We like to stick to what we already know and we view new information within that context. "Indeed, social cognition literature on belief perseverance has found that impressions, once formed, are highly resistant to evidence to the contrary," wrote DiFonzo and Bordia.[93] Once we hear something and come to accept it—even if it's not core to our beliefs and worldview—it's still difficult to dislodge. "[W]e humans quickly develop an irrational loyalty to our beliefs,

and work hard to find evidence that supports those opinions and to discredit, discount or avoid information that does not," wrote Cordelia Fine, the author of *A Mind of Its Own: How Your Brain Distorts and Deceives*, in *The New York Times*.[94]

Another complicating factor for debunkers is the way they're received by the people they attempt to inform. If a person is harsh or dismissive in the way they correct someone, it won't work. (Meaning: Chastising someone as stupid or gullible for sharing a false viral story is a bad strategy.) Tone and approach matter; the person being corrected needs to be able to let down his or her guard to accept an alternate truth.

Clearly, there are a lot of factors that need to be met (and overcome) in order to achieve effective debunking. I will examine those in more detail, and with suggestions tailored to newsrooms, later in this report. For now, it's important to understand what we're up against. Below is a look at seven phenomena that make it difficult to correct misinformation. Remember, again, that these barriers take hold when we're able to overcome the initial hurdle of getting the correction in front of the right people.

The Backfire Effect

In a post on the blog You Are Not So Smart, journalist David McRaney offered a helpful one-sentence definition of the backfire effect: "When your deepest convictions are challenged by contradictory evidence, your beliefs get stronger."[95]

This is what appeared to happen in the vaccine study, something that has been documented time and again.[96] McRaney delved further into the backfire effect in his book, *You Are Now Less Dumb: How to Conquer Mob Mentality, How to Buy Happiness, and All the Other Ways to Outsmart Yourself*. He offered this summary of how it manifests itself in our minds and actions:

> Once something is added to your collection of beliefs, you protect it from harm. You do this instinctively and unconsciously when confronted with attitude-inconsistent information. Just as confirmation bias shields you when you actively seek information, the backfire effect defends you when the information seeks you, when it blindsides you. Coming or going, you stick to your beliefs instead of questioning them. When someone tries to correct you, tries to dilute your misconceptions, it backfires and strengthens those misconceptions instead.

Confirmation Bias

Confirmation bias is the process by which we cherry-pick data to support what we believe. If we are convinced of an outcome, we will pay more attention to the data points and information that support it. Our minds, in effect, are made up and everything we see and hear conforms to this idea. It's tunnel vision.

A paper published in the *Review of General Psychology* defined it as "the seeking or interpreting of evidence in ways that are partial to existing beliefs, expectations, or a hypothesis in hand."[98]

Here's how a *Wall Street Journal* article translated its effects for the business world: "In short, your own mind acts like a compulsive yes-man who echoes whatever you want to believe."[99]

Confirmation bias makes us blind to contradictory evidence and facts. For journalists, it often manifests itself as an unwillingness to pay attention to facts and information that go against our predetermined angle for a story.

Motivated Reasoning

Psychologist Leon Festinger wrote, "A man with a conviction is a hard man to change. Tell him you disagree and he turns away. Show him facts or figures and he questions your sources. Appeal to logic and he fails to see your point."[100] We think of ourselves as rational beings who consider the evidence and information placed in front of us. This is often not the case. We are easily persuaded by information that fits with our beliefs and we harshly judge and dismiss contradictory details and evidence. Our ability to reason is therefore affected (motivated) by our preexisting beliefs.

"In particular, people are motivated to not only seek out information consistent with their prior attitudes, beliefs, and opinions, but also readily accept attitude-confirming evidence while critically counterarguing attitude-challenging information," wrote Brian E. Weeks, in his paper "Feeling is Believing? The Influence of Emotions on Citizens' False Political Beliefs."[101] "Information supporting one's prior attitude is more likely to be deemed credible and strong, while attitude-discrepant information is often viewed as weak and ultimately dismissed."[102]

Motivated reasoning and confirmation bias are similar in many ways. In *Kluge: The Haphazard Evolution of the Human Mind*, psychologist Gary Marcus expressed the difference this way: "Whereas confirmation bias is an automatic tendency to notice data that fit with our beliefs, motivated reasoning is the complementary tendency to scrutinize ideas more carefully if we don't like them than if we do."[103]

Biased Assimilation

Fitting well with motivated reasoning is the process of biased assimilation. In *True Enough*, Manjoo defined it as the tendency for people to "interpret and understand new information in a way that accords with their own views."[104] (He cited research by psychologists Charles Lord, Lee Ross, and Mark Lepper from their paper, "Biased Assimilation and Attitude Polariza-

tion: The Effect of Prior Theories on Subsequently Considered Evidence.") Simply put, we interpret and understand new information in a way that fits with what we already know or believe.

Hostile Media Effect

Researchers at the University of Michigan took a news clip from Al Jazeera English and showed it to a sample of 177 Americans who had been recruited via Mechanical Turk. Some of the participants saw the clip, which was about the Taliban, with Al Jazeera branding. Some saw the same clip, but with CNN International's branding. The third group didn't watch the clip.

All were asked to rate the level of bias at CNNI and Al Jazeera.

"Watching the AJE clip—branded as AJE—did not seem to have an impact on perceptions of bias; bias ratings were equal between those in the AJE-clip-watching group and the control group," the researchers wrote.[105] But the results were not the same for the people who watched the CNNI-branded clip. They "rated CNNI as less biased than those in the control group."[106]

People who watched the exact same report came away with different perceptions of bias, based on which news organization they thought produced it.

Two people can watch the same news report, or read the same article, and come away with completely opposite interpretations. Partisans are particularly susceptible to this: They think the media is biased against their point of view. As Jonathan Stray, then with the Associated Press, wrote in an overview of hostile media effect research, "Liberals and conservatives can (and often do) believe the same news report is biased against both their views; they aren't both right."[107] But they are both experiencing the hostile media effect.

Group Polarization

Group polarization is what happens to existing beliefs when we engage in a group discussion. If we're speaking with people who share our view, the tendency is for all of us to become even more vehement about it. "Suppose that members of a certain group are inclined to accept a rumor about, say, the malevolent intentions of an apparently unfriendly group or nation," wrote Sunstein in *On Rumors*. "In all likelihood, they will become more committed to that rumor after they have spoken among themselves."[108]

If we start a conversation with a tentative belief about an issue, being in a room with people who strongly believe it will inevitably pull us further in that direction. This is important to keep in mind in the context of online communities. A 2010 study by researchers from the Georgia Institute of Technology and Microsoft Research examined group polarization on Twitter. They saw that "replies between like-minded individuals strengthen group identity," reflecting this group dynamic. When it came to engaging with people and viewpoints that were outside of what they personally felt, Twitter users were "limited in their ability to engage in meaningful discussion."[109]

Repetition/Rumor Bombs

Repeated exposure to a rumor has an effect on believability. *A 1980* study found that participants were more inclined to pass along a rumor after they'd heard it two or three times.[110] Other studies have found similar links between repetition and belief and/or propagation, according to DiFonzo and Bordia. This also accords with the concept of a "rumor bomb." A perfect example of this device is the so-called "death panels" that were falsely claimed to be a part of President Obama's healthcare legislation. The phrase was compact and jarring. It was a perfect meme, and anyone who repeated it—even when trying to debunk it—further implanted it and its negative connotations in people's minds.

This is a significant challenge to journalists who attempt to offer facts about a rumor bomb.

Researchers Regina G. Lawrence and Matthew L. Schafer examined a sample of newspaper articles and news transcripts that mentioned Sarah Palin's use of the term "death panels."[111] They found that almost two-thirds of the coverage made no specific mention of the veracity of the death-panels claim. Thirty-nine percent labeled it as false or something similar. But even more notable is the fact that it may not have mattered much either way. They wrote:

> The "death panels" claim resembles what one author has called a "rumor bomb": a strategic catchphrase intentionally designed to undermine serious public deliberation by playing on public uncertainty or fear . . . Because such claims are not defined with any degree of specificity, he argues, the ability to rebut the rumor with facts is hampered. Such rumors present a "crisis of verification" in which "the reporter is unable to verify the claim through . . . other reliable sources, in accordance with professional rules of reporting and codes of ethics," yet because such rumors make for interesting news and are easily spread through new media outlets, they are disseminated anyway—thus accomplishing their goal.[112]

Repeating the rumor bomb detonates it—regardless of context.

Denial Transparency

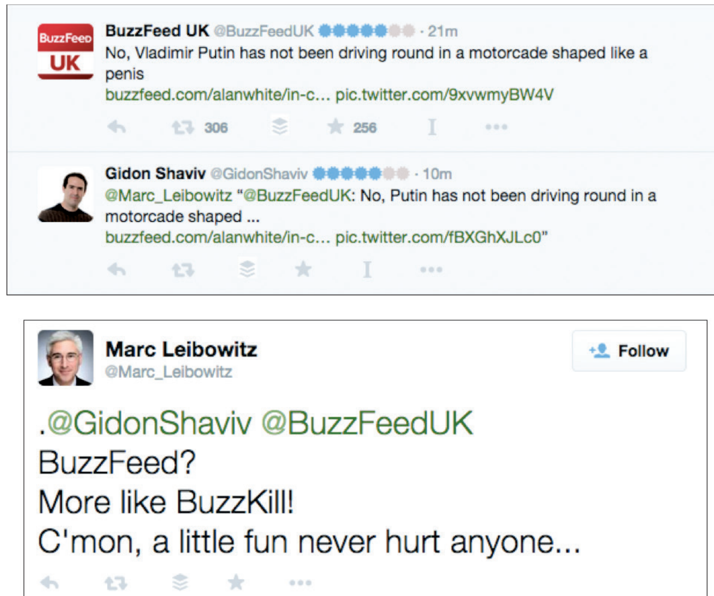
The concept of denial transparency was developed by psychologists in a 1985 paper "The Transparency of Denial: Briefing in the Debriefing Paradigm."[113] It holds that in denying a claim we are in some ways helping it take hold in a person's mind. An example cited by authors Daniel M. Wegner, et al., comes from a study of innuendo-laden newspaper headlines.

They wrote, "When people read an (invented) newspaper headline asserting that 'Bob Talbert is not linked with Mafia,' they develop unfavourable impressions of Bob Talbert." The reason is that "people, unlike computers, have no 'reset button' that can completely eradicate memory. Rather, people process information cumulatively, always adding to their store of knowledge, and cannot use one item of information to delete another." This helps explain why simple denials can be ineffective, and why the research about rumor headlines presented later in this paper is of particular importance and concern.

The Cliff Clavin Effect

The long-running sitcom *Cheers* featured a character who was the worst kind of know-it-all. Cliff Clavin seemed to begin every sentence with, "Actually," which was often followed by his correcting what someone had said. Even though they have good intentions, debunkers can be their own worst enemies. I often think of Clavin when I witness the blowback that debunkers face, and so I coined this term.

Aside from people refusing to believe what they say, debunkers of wish rumors are often chastised for ruining a nice story or being a spoilsport. Below is an example of this effect in action. Here is a response from a man who was responsible for helping to spread a fake image of a phallic motorcade for Vladimir Putin.[115]



The Challenge

Taken together with the feat of spreading corrections in the networked world, these effects stack the deck against efforts to debunk and correct misinformation. However, there are experiments and studies that offer evidence of effective strategies. The quantitative research conducted with the Emergent rumor database revealed data about debunkings that spread the same or more than the original reports.

What is clear from the data, however, is that news organizations and journalists engage in habits and practices today that can go against what works best for properly communicating unverified information.

IV. Rumor and Debunking

a. Key Trends for How Online Media Handle Unverified Claims, Rumors, and Viral Content

A mother discovers her son is gay and she disowns him. She then finds herself disowned by her father for being so heartless. It's a perfect parable about tolerance, and it was laid out in a letter sent from a father to his daughter after she'd cast out her gay son. The letter was handwritten on hatched paper and first appeared on the Facebook page of a company (FCKH8) that sells an anti-hate clothing line in September of 2013.[116]

"Kicking Chad out of your home simply because he told you he was gay is the real 'abomination' here. A parent disowing (sic) her child is what goes 'against nature,' " reads part of the letter. The father signed off, "[If] you find your heart, give us a call."[117]

Gawker was one of many websites to publish the letter.[118] At the time of this writing, the post had been viewed close to a quarter million times. It also caught the eye of Gawker owner Nick Denton. He questioned the letter's veracity and whether Gawker should be drawing attention to it. Denton raised his concerns in a public comment on the post:

> Sorry, I find this story even less credible than the last of its type. Yet another heartwarming letter via FCKH8? That's the same apparel company that published the touching note from a father to the son

> who couldn't bring himself to come out. In that case too, the company refused to allow independent verification of the source—also out of professed concern for the privacy of the family.[119]

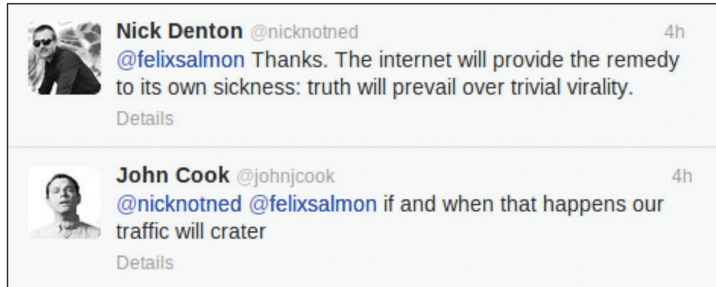
The thread soon evolved into a public discussion between members of the Gawker editorial team about how to balance the site's mission to aggregate popular online content with a need to determine whether it was actually true. (As of today, no proof has emerged to suggest the letter is real or, alternatively, to definitively debunk it.)

The exchange between Denton and his staff is perhaps the most public expression of the tension that exists within news organizations between chasing rumors and unverified viral content, and doing the work of journalism by working to verify them. Gawker's discussion is representative of a boom in newsrooms publishing unverified stories on their websites. This behavior, and Gawker's internal strain, flows directly from the business dynamics of online advertising-funded news websites and the explosion of user-generated content. It is out of this environment that certain patterns have emerged. The Gawker story based on FCKH8's Facebook post exhibits many of the common practices associated with how news websites currently handle unverified content, as documented in the Emergent database.

"People don't look to these stories for hard facts and shoe-leather reporting," wrote Neetzan Zimmerman, the author of the post Denton disputed. "[People] look to them for fleeting instances of joy or comfort. That is the part they play in the Internet news hole. Overthinking Internet ephemera is a great way to kill its viral potential."[120]

Zimmerman's job title at Gawker was editor of the Internet. He was the primary person working to identify potential viral hits and get them onto the site. Zimmermanwas very good at it until he left Gawker in 2014 to join Whisper, a mobile startup that enables people to share anonymous messages.

Zimmerman's argument was that applying verification or other journalistic processes to viral content robs the content of its appeal. Denton's view was that the site should help surface the truth, a point he also made on Twitter, which led to an amusing reply from then-editor in chief of Gawker John Cook:



Cook had a point: Just two months earlier, Zimmerman's viral prowess had racked up sixteen million page views for the site. As Gigaom's Matthew Ingram noted, that was "more than some entire websites produce with dozens of staff."[121] Ingram wrote that variations of the Gawker debate were likely happening in other digital newsrooms. "These are the kinds of ethical dilemmas that tend to crop up when your editorial output is based in part on finding and sharing—and benefiting from the traffic generated by—viral content, the way it is for outlets like Gawker, or BuzzFeed, or Upworthy," he said.[122]

The sites Ingram referenced make it a priority to identify and put their stamp on content that is already viral or that has the potential to get there. Joining them are websites of traditional publishers such as the *Daily Mail*, the *New York Post*, the *New York Daily News*, *The Independent*, as well as the digital properties of local TV news stations and others.

The quantitative research element of this project, which utilized the Emergent database, did not focus exclusively on viral content. Its goal was to identify examples of unverified claims and rumors that the press reported and to capture these in the database. (Our methodology is laid out in the

next section and is followed by a deep dive into specific trends and case studies.) However, it quickly became clear to us that viral content constitutes one of the most common types of unverified claims being published. These articles also, of course, attracted the most social shares and often generated the most online media coverage. Viral content, therefore, became a focus.

It accompanied three other categories of news that also proved to be constant sources of rumor and unverified claims in the online press:

- Business/technology news, including reports of acquisitions, product releases, and other claims.
- World/national U.S. news, including rumors about North Korea, deaths in Mexico, and other stories.
- Conflict news, which primarily emerged from war zones in the Middle East.

Together these categories created a level of diversity for the types of rumors and news organizations we tracked in the database. Despite their differences, there were still clear, overall trends that cut across the categories.

Whether it was a report about a woman claiming to have had a third breast implanted, one about the terrorist capture of commercial airplanes at a Libyan airport, or the report of a pending acquisition by Apple, there are similarities in how online media treat and cover these types of claims.

Below are five key trends we identified from the data. As detailed in the methodology section of this paper, these conclusions are based on analysis of the content and social share patterns of rumor articles collected in the database.

It's important to note that we can't project how our sample of articles differs fromthe entire population of online stories. We are also not able to offer definitive data about the rate of the following practices (described below)

among online media as a whole. However, after spending months identifying and tracking articles about rumors, we saw the following trends apply to a wide variety of English-language news websites.

1. Journalism as an act of pointing dominates.

Joshua Benton, editor of the Nieman Journalism Lab, offered the best description of how news organizations cover rumors and unverified claims in a *New York Times* article about news outlets and viral content. "This is journalism as an act of pointing—'Look over here, this is interesting,' " he said.[123]

The vast majority of news articles about a rumor or unverified claim merely repeat the claim without adding additional evidence or reporting. They "point" to it. In these cases, there is often no practice of reporting or verification, leaving a rumor to propagate and become entrenched as true. As Benton told the *Times*, "You are seeing news organizations say, 'If it is happening on the Internet that's our beat.' The next step of figuring out whether it happened in real life is up to someone else."[124]

That approach, which echoes Zimmerman's position in the Gawker debate, leads to an increase in the amount of unverified information the press promotes and, in effect, gives a stamp of credibly. "What's news is what's out there, whether or not it's been checked and verified," wrote Marc Fisher in a *Columbia Journalism Review* cover story headlined, "Who cares if it's true?"[125] A core element of journalism as an act of pointing is that independent confirmation is not considered necessary. Verification becomes a job for another news organization or something to be pursued after the story goes up.

Writing in Slate, Dave Weigel explained that the incentives are all in favor of publishing first.

"Yes, people on the Internet want to believe salacious stories. Reporters want to publish stories that people read," he wrote. "If there's a great reward, and little downside, to be had in publishing B.S., the Internet's going to get more B.S. As one of my colleagues put it, 'Too good to check' used to be a warning to newspaper editors not to jump on bullshit stories. Now it's a business model."[126]

This trend/practice results from three factors:

a. *Incentives favor moving fast and publishing content that is likely to spread.* The rewards for jumping early on unverified content and claims are clear. The risk of damaging a personal and/or organizational reputation also diminishes if this approach is part of an organization's culture. There are, however, outlets that try to strike what they see as a balance. They don't want to get called out for publishing fake content but still want to reap the traffic rewards.

   Ashish Patel, vice president for social media at NowThis News, expressed this approach as relying on "third-party verification." Meaning that "if the [*New York*] *Times* is reporting something, it's already verified," he told CJR.[127]

   Once one news organization has jumped on something, others will follow, often pointing back to that first outlet. After a few outlets have aggregated and reaggregated each other, the origin of the information becomes unclear. This is the terrible power of the cascading Internet, with many "fingers" pointing back and forth. If readers are inclined to trust the outlet that exposes them to the information, and if the news conforms to what they generally suspect to be true, then they'll be inclined to believe the claim and propagate it.

b. *The value of restraint is hard to quantify.* The pointing approach refers to websites that opt to cover a claim in its early, unverified stage. There are of course news organizations that choose not to cover a given claim. *The New York Times*, for example, appears in the database primarily with articles that talk about a rumor that has been confirmed or proven false. News organizations that do not follow a strategy of jumping on social content with viral potential were less likely to appear in our database.

   Another major publication that seems to follow this strategy is the *Wall Street Journal*. While it did not regularly spread viral news, it was a major source and amplifier of rumors about acquisitions or other matters of finance, defining a narrow area of rumor creation and propagation.

   In the above examples, among others, editorial restraint is expressed by a lack of coverage rendering certain publications absent from the Emergent database. As I previously wrote (emphasis in the original), "Quality sources of information are sometimes characterized by what they *aren't* reporting. They are the ones holding back while others rush ahead. The ones sticking to a verification process and not being swayed by speculation or a desire for traffic and attention."[128]

   Thus, our research inevitably focuses more on the news outlets who choose to rush ahead, of which there are many.

c. *An onslaught of potentially newsworthy content on social networks has lowered the bar for what news organizations will follow-on.* News organizations have traditionally jumped on reports by other media outlets. Or, if they wanted to cover a story but didn't want to cite the competition, they would match it by doing their own reporting.

> The massive increase in potentially newsworthy information being shared on social networks and the web means news organizations aren't just making decisions about following other media outlets. They are instead pointing at a tweet, photo, video, or claim from a third party prior to applying verification or reporting. Or they are linking back to a news article that did the initial pointing. (In some cases, that media organization is the source of a rumor. That usually means the journalist quoted one or more anonymous sources.)

The bottom line is that news organizations covering rumors and unverified claims at their early stages typically point to the claim without applying additional reporting or verification. They jump on it quickly to plant a flag and reap attention and traffic. "[T]he easiest and most infectious way to get enormous amounts of traffic is to simply share the stuff which is going to get shared anyway by other sites," wrote journalist Felix Salmon in an article for the Nieman Journalism Lab. "Some of that content will bear close relation to real facts in the world; other posts won't. And there are going to be strong financial pressures not to let that fact bother you very much."[129]

The rumors tracked for our research show that, indeed, many news organizations don't let this bother them much, if at all.

2. Point, then retreat.

Connected to the above trend is news organizations' lack of follow-up when an unverified claim is eventually resolved. As detailed in the forthcoming methodology section, we selected a sample of rumors to examine whether news organizations came back to a rumor after it had been confirmed true or false. What we found was an overall lack of follow-up in the form of updates to existing stories or the publication of new stories. This means news organizations frequently jump on a rumor or claim but don't return to it.

For example, one rumor we tracked claimed that a mass grave found in the Mexican city of Iguala contained the bodies of a group of students who had disappeared after a protest. We logged articles from 14 news organizations in the early days of the claim. Weeks later, DNA testing proved the bodies did not belong to the students. Of the 14 news outlets that covered the initial speculation, just over 35 percent (five) followed up with an article noting the rumor was proven false. Note also that we identified five articles that reported the graves rumor as true in the early, unverified stage of the claim. That means they were sources of misinformation.

3. Declarative headlines frequently accompany unverified claims.

One clear and problematic trend among news sites is writing a headline that declares a rumor or unverified claim as true and pairing that with body text that walks back the declaration. The latter is often achieved by attributing the claim to sources (such as other news sites) or by using hedging words such as “reportedly.”

This practice creates dissonance for the reader which, as detailed in the following research section about headlines, leaves him or her with the impression that the content is true. This tendency was, for example, present in the Gawker story about the heartwarming letter. “Grandpa Writes Letter Disowning Daughter After She Disowns Gay Son,” read the headline. It offered no indication that the author considered it to be unverified at the time of publication.

Yet the second paragraph of the body text—and the first mention of the letter—includes this cautionary language: “a letter purporting to be from a ‘disappointed’ grandfather.” The post further uses hedging language such as “reportedly,” and also includes the sentence, “Though the letter remains unverified, that hasn’t stopped thousands from sharing it and expressing their support for Chad and his grandpa.”[130]

To cite an example from the Emergent database, we tracked the claim that North Korean leader Kim Jong-un was in poor health due to gorging himself on Emmental cheese. (This was alleged to have precipitated his large weight gain, which caused him to limp in a public appearance.) A *Daily Mail* story ran with the headline: "Is Kim Jong ill? North Korean dictator in poor health as his weight has ballooned thanks to an obsession with cheese." The headline begins with a question, but the second part of it is a declarative statement. The story's lead then walks it back:

> Kim Jong-un is putting his health at serious risk due to his dangerously high consumption of Emmental cheese, it has been claimed.[131]

An even more pronounced example came from Vox.com's coverage of pro-democracy protests in Hong Kong. The headline declared that "Hong Kong's protesters are using the same 'hands up, don't shoot' gesture used in Ferguson."

Then, in the third paragraph, came this:

> It's impossible to say the degree to which protesters are using the gesture as a deliberate nod to Ferguson, or borrowing something they'd seen on the news for their own purposes, or using it coincidentally.[132]

The headline linked the gesture to Ferguson, and then the article reported that, actually, there is no evidence of any connection.

4. Unverified claims attract more interest than corrections or updates.

A simple, and admittedly unsurprising, finding is that rumors and unverified claims attract the most interest (in terms of social shares and articles published) in their early, unverified stages.

This is when the information is new and therefore when the opportunity is greatest to attract attention and traffic. This trend is also clearly connected to news organizations' lack of updates (trend number two).

With a few exceptions (see the pumpkin spice condom case study), the golden hour for an unverified claim or rumor is when it holds the possibility of truth. Many online editors and writers know this and abide by it—strike early or be left behind.

"If you throw something up without fact-checking it, and you're the first one to put it up, and you get millions and millions of views, and later it's proved false, you still got those views," Ryan Grim, the Washington bureau chief for The Huffington Post, told *The New York Times*. "That's a problem. The incentives are all wrong."[133]

The data also shows that even when news organizations update their work with new information or corrections, those rarely attract a similar number of shares. An example: BuzzFeed's article about a woman who claimed to have plastic surgery to implant a third breast.[134] The site's original report (which received subsequent updates) flagged the woman's claim as being unverified in both the headline and body text. That first version attracted over 30,000 shares on Facebook, Twitter, and Google+. Two subsequent revisions to the article saw the body and then the headline changed to declare her story a hoax. Together, those two revisions generated a total of just over 5,000 shares, or roughly a sixth of the initial report. This was a very popular story for BuzzFeed, racking up over 1.5 million views as of this writing. The ratio of shares also indicates that most of those views likely came when her claim was not yet debunked.

New York magazine's post about the woman ran with the declarative headline, "Woman Gets Third Boob to Appear Unattractive to Men."[135] The body text included hedging language. That version attracted over 9,000 shares, a bona fide hit for the site. A subsequent version with headline and body text that debunked the claim attracted a total of just 25 shares. All data collected as of December 2014.

The failure of debunkings to match the share counts of initial (sometimes mistaken reports) is largely a result of news websites failing to apply the same amount of effort to promote their corrections/updates and follow-up articles. Another factor is likely the dynamic detailed earlier in this paper, whereby hoaxes or rumors are far more interesting than the truth or a correction.

5. Fake news articles generate far more shares and social interactions than debunking articles.

Using the metric of social shares, it was clear that it's incredibly difficult to create debunkings for fake news articles that attain a similar or greater number of shares. This trend, and the one detailed above, both suggest that the press has much to learn about how to create truly viral debunkings.

In the database, we tracked a selection of 11 fake news articles from sites such as National Report, Huzlers, and The Daily Currant. We also logged articles that attempted to debunk their fake reports.

For example, Huzlers.com published a fake article claiming that the Earth will experience six days of complete darkness in 2014. Once it began to attract attention on social networks, there were seven debunking articles from outlets including Snopes, *The Independent*, The Huffington Post, *Times of India*, and others.

The Huzlers story generated just over 840,000 shares and social interactions, including Facebook likes, comments, and +1s on Google+. The seven debunkings earned a little more than 127,000—an impressive number on its own, but still only a little better than a seventh of the fake story. This dynamic played out again and again. This is not surprising, as the creators of fake news have some key advantages over their debunkers. Fake articles are engineered to appeal to hopes, fears, wishes, and curiosity. They are not restrained by facts or reality. This gives them a leg up in creating shareable content that drives engagement.

In Summary

The above trends may not strike journalists and media professionals as surprising. They are driven by digital business models, social and search optimization techniques, and other factors that create strong incentive for online media to push forward with unverified reports, suspect viral news, and traffic-generating rumors. (They also drive the business model, and therefore existence, of fake news websites.)

The execution of the resulting rumor articles is often tilted toward presenting the information as true, or likely true, since that creates urgency for people to click on headlines and to reshare what they see. It's an established cycle: Clicks and shares drive traffic and revenue, and increase the perceived value of the journalists who've created the content. This causes other publishers to mimic the same strategy, resulting in the current situation whereby packs of online journalists race after rumors and unverified social content to try and capture their traffic potential.

The result is that online media currently play a major role in causing news consumers to believe things that are not true, or to leave them with incomplete information about a person, event, or topic of interest. This is the opposite of the role the press is supposed to play in the information ecosystem.

b. Lessons From Debunking Efforts in Journalism and Elsewhere

In the fall of 2013, a story circulated on Facebook about the murder of a Swedish dentist.

Marcia Karlsson, the dentist, was allegedly beaten to death by an ex-boyfriend. In a Facebook post that people in Sweden shared thousands of times, a woman named Madeleine told the story of the murder of Karlsson, whom

she identified as her friend. Madeleine said the murder hadn't received any press coverage because the media in the country didn't want to write about a crime committed by an immigrant.

It was a story that outraged many people, and Madeleine's post rocketed around Facebook in Sweden. Karlsson, the murdered dentist, had her own Facebook profile, and she was connected to real people. There were pictures of her and her two adopted children.

Jack Werner, the social media editor for *Metro* Sweden, saw Madeleine's Facebook post and wanted to write about it. As he dug deeper into the facts of the case, the story began to fall apart. Court records came up empty. Marcia Karlsson, the beloved dentist, wasn't listed in any directory. "I found out that the whole story was fake, that the dentist didn't exist, and that it probably was just a big propaganda thing with a racist agenda," Werner said.

He wrote about what he found, offering a thorough debunking of the hoax.[136] The article could have been a one-off for Werner, but it ended up birthing a regular feature for him and two *Metro* Sweden colleagues, The Viral Reviewer (*Viralgranskaren*). Since March of 2013, the trio has worked together to investigate trending stories published by the Swedish press to see if the facts stand up to scrutiny.

"I started thinking about the many fake stories that probably circulated among the some five million Swedish Facebook users, stories that we as journalist[s] would never see because we aren't friends with all of them," he said. "I got the idea to do that kind of journalism in a more regular and systemized manner, which also would enable us to ask the readers for tips about what they're seeing."

Werner said the reaction from members of the public to the feature "is the best I've ever had. I get a feeling that people really wanted and needed this kind of service." The feature has proven so popular and effective that the reporters were awarded the 2014 Innovator of the Year award at the Swedish Grand Prize for Journalism.[137]

The Viral Reviewer is one of several dedicated debunking efforts that have sprung up at news organizations since 2013. Caitlin Dewey of *The Washington Post* writes a weekly post, "What was fake on the Internet this week." It started not long after Gawker launched a similar weekly effort it dubbed "Antiviral." Adrienne LaFrance originally wrote the column, but when she took a job at *The Atlantic* it became a dedicated blog.[138] Another site in the Gawker media network is also doing consistent debunking work. Matt Novak writes a regular post about the veracity of viral photos on his Paleofuture blog, which is part of Gizmodo. He and others also contribute to Factually, a Gizmodo blog dedicated to debunking and fact-checking.

Some of these initiatives emerged after Charlie Warzel authored his post for BuzzFeed that predicted "2014 Is The Year Of The Viral Debunk."[139] Data collected for this paper suggests that the viral aspect of debunking hasn't yet been realized, but there has definitely been an uptick in dedicated journalistic debunking efforts.

These new endeavors share some similarities with political fact-checking sites such as PolitiFact, *FactCheck.org*, and *The Washington Post*'s Fact Checker blog. They are all committed to sorting fact from fiction. But while political fact-checkers focus their efforts on the public statements of politicians, political groups, and public figures, the newer debunking attempts home in on online misinformation and don't restrict themselves to a particular vertical.

Interviews with journalists engaged in these efforts revealed that, like Werner, they feel this work is the core of what journalism is supposed to be. Still, some expressed feelings of futility or frustration that fakes and hoaxes are so prevalent, and beliefs that news organizations play a significant role in helping them spread.

Members of the skeptic community, some of whom I spoke to during my research, echoed the same sense of frustration. That community includes a diverse group of bloggers, scientific investigators, and others who seek to

dispel hoaxes, myths, scams, and other forms of trickery. Their sites include the venerable snopes.com, as well as Hoax-Slayer.com, Doubtful News, and many more.

These skeptics and urban-legend busters also pointed to news organizations as being part of the rumor-mongering problem, as much as they are the solution. Brett Christensen has run Hoax-Slayer.com since 2003, and said he wished the press made more of an effort to debunk falsehoods. "I think it would be a very positive step if the bigger news outlets started to report more on hoaxes and scams," he said. "Wider coverage might more effectively get through to the Internet public at large."

Through phone interviews and an online questionnaire, these journalists and skeptic debunkers shared best practices and some cautionary advice about trying to combat online misinformation.

The Value of Journalistic Debunking

The debunking efforts in the press are in some ways an anti-viral viral content strategy, a maneuver to insert themselves into trending content by examining and verifying viral stories. This brings traffic to debunkers, but it also helps spread the truth about a viral story.

One example of a debunking that delivered big traffic and helped provide valuable information came during Hurricane Sandy in 2013. Journalists at *The Atlantic* collaborated to confirm and debunk viral images that spread in the wake of the storm.[140] Alexis Madrigal, who now works for Fusion, led the initiative. He saw a need because, he said, "So many fake Sandy photos were creeping up, and someone, somewhere, needed to try to sort that shit out."

Madrigal said it was by far the most popular piece of content he's ever worked on. Part of the reason for the post's success was that it provided useful and relevant information at a time of high anxiety. In the language of rumor, it helped people make sense of the situation.

The other reason it was effective, according to Madrigal, is that he paid special attention to the visual aspects of the post. "In my Sandy post, I created a visual language for real and fake images that I think was really effective," he said. The approach included embedding an indication of the photo's veracity in the image itself. (It's similar to other efforts such as PolitiFact's Truth-o-Meter, which offers a visual verdict.)[141] Here's an example:

One benefit of approaches like this is that the images travel on social media with their veracity verdict intact. In this case, readers didn't have to click through to see whether an image was real, fake, or undetermined.

Tom Phillips, who at the time was working for MSNBC UK, was another collaborator on *The Atlantic*'s post. He had launched a Tumblr, "Is Twitter Wrong?," that was doing similar debunking work during the storm.[142] Phillips agreed to help The Atlantic. "Part of the reason I did it in the first place was as an experiment to see if it was possible [to debunk in real time]," Phillips said in a previous interview with me. "You know, would that fit into sort of a daily workflow in a newsroom, in that kind of context, or would it just

become a massive, massive time suck? And the answer from that was basically yeah, you can do it. You can do an awful lot of it in a way that actually fits in with a daily workflow pretty well."[143]

Phillips said he subsequently saw more journalists engage in debunking during breaking news stories such as the Sandy Hook shootings and the Boston Bombings. "I saw an awful lot of journalists were actively going out doing debunking," he said. "Debunking is now part of reporting, basically."

Caitlin Dewey has written a weekly debunking post for *The Washington Post*'s Intersect blog since March of 2014. She calls it "the most fundamental service of all—correcting very basic misconceptions about the world and the news." Though some viral hoaxes or items of misinformation can be amusing, Dewey said she often encounters "things that are being misconstrued in a way where there is a danger to public knowledge and public safety."

She believes that her weekly debunking posts fulfill an important journalistic mission—and they get solid traffic. (She declined to share specific metrics.) "They do very well," she said. "That wasn't the case initially. I don't know how long it took them to catch on, but now they consistently do quite well." After having worked on the column for more than thirty consecutive weeks, Dewey has never had fewer than five items to debunk.

Adrienne LaFrance was also never short of material when she created the Antiviral column for Gawker at the end of 2013. Each week she focused on reporting out the details behind hoaxes rather than simply aggregating what had been debunked. "My goal is always to have reporting behind it because it's very easy to Google the hoax and aggregate what people have already done," LaFrance said in an interview before she stopped writing the column. "I'd much rather go deeper. One reason so much gets shared is people not taking time to put out a call or do the emailing back and forth with PR people—and we need to do that."[144]

Her comment that a debunking is often only a phone call or email away underlines Phillips' point that this work can be done quickly and without a huge amount of effort. But many newsrooms don't put the emphasis on asking questions before something is aggregated and pushed out.

Changing Minds?

Journalistic debunking efforts aren't only focused on viral images and hoaxes. In Ukraine, StopFake.org operates in English and Ukrainian. It was launched in 2014 in response to the propaganda and misinformation that flowed around the conflict in that country.

A team of volunteers, including teachers and students from the Mohyla School of Journalism, track false claims from Russian officials and their supporters. They debunk them in articles and videos. "In our case the most successful thing for us was that no one from the Russian side was expecting us to start debunking things," said Margo Gontar, a co-founder of the site who works as an anchor for a Ukranian media outlet. "In the beginning there were bold lies which were actuality really easy to debunk."

Gontar said they initially received upward of 150 emails a day from people suggesting things for them to look into. After just three months of operation the site was attracting 1.5 million visitors a month, according to an article from the Nieman Journalism Lab.[145] Gontar noted, however, that the Russian government's RT cable channel, which often spreads content that StopFake debunks, has a vastly bigger budget and has announced plans to expand into other languages.

While they are up against a better-funded opposition, Gontar said one mark of StopFake's success is that it caused the Russian government and its supporters "to change their strategy" and try to create more sophisticated misinformation. In terms of impact, she doesn't know at what rate Ukrainians

and others use the debunking work they do to help spread the truth. “I don’t have stats . . . but I did receive letters from readers who said, ‘You know, I managed to change someone’s mind thanks to your articles,’ ” she said.

But Gontar is also careful to note that their site likely has little or no effect on people whose minds are made up. “People who truly believe that Putin is the savior of the planet and that all Ukrainians are fascists—it’s kind of hard to tell something to them,” she said.

Other Debunkers

The skeptic movement has its roots in the work of a magician and escape artist. James Randi toured the world as the Amazing Randi, performing remarkable illusions. Randi wanted to entertain, not deceive. When he saw people (like Uri Geller) claim to have special psychokinetic abilities, he challenged them to reproduce their powers in a controlled environment. (Geller, among other things, would bend spoons using what he said was the power of his mind.)

In one famous incident, Randi worked with the staff of *The Tonight Show With Johnny Carson* to ensure that Geller couldn’t pull any tricks when he appeared. Geller’s ensuing guest spot was a complete failure, and he lived it out in front of millions of viewers. Yet, rather than be exposed as a fraud, Geller’s devastated reaction earned him sympathy from the audience—and an instant booking on *The Merv Griffin Show*, among others, according to a profile of Randi in The New York Times Magazine.[146] “To an enthusiastically trusting public, [Geller’s] failure only made his gifts seem more real: If he were performing magic tricks, they would surely work every time,” the *Times* reported.[147]

The article included an explanation of why Randi prefers to call himself a scientific investigator, rather than a debunker:

> Because if I were to start out saying, "This is not true, and I'm going to prove it's not true," that means I've made up my mind in advance. So every project that comes to my attention, I say, "I just don't know what I'm going to find out." That may end up—and usually it does end up—as a complete debunking. But I don't set out to debunk it.[148]

Randi has inspired many people to become scientific investigators. Tim Farley is a software developer by trade, but he also runs websites to help people learn how to judge the veracity of the information they see online. "I feel the best route is to encourage people to become their own fact-checkers and show them how the techniques used by the pros can be used by anyone now that Google exists," he said.

One of Farley's websites, WhatsTheHarm,[149] attempts to calculate the harm of misinformation, whether it comes in the form of parents who won't vaccinate their children or people who rely on faith healing. As of November 26, 2014 the site listed the total harm at "368,379 people killed, 306,096 injured, and over $2,815,931,000 in economic damages."[150] These figures are anecdotal, and are based on the work of a group of volunteers who identify examples collected from news reports.

Another man, Robert Todd Carroll, has been engaged in skeptic work for two decades and maintains The Skeptic's Dictionary.[151] Like Randi, he said he doesn't approach his work with a debunker's mindset. "I don't always begin an investigation with the idea of debunking an idea," he said. "My initial inquiries into acupuncture and homeopathy, for example, were attempts to understand everything that was known about these practices and what scientific evidence there was for the many claims made about their efficacy. I ended up debunking both because the evidence led me to conclude that both are little more than placebo-based medicine, known to shamans centuries ago."

Benjamin Radford, also a scientific investigator, echoed this: "Of course often a mystery is debunked when it is explained, but I try to remain open-minded about the subjects." Radford is deputy editor of *Skeptical Inquirer* magazine and a research fellow with the Committee for Skeptical Inquiry, a nonprofit educational organization. He has written many books on skepticism, myths, and paranormal investigation, including (fittingly) *Media Mythmakers: How Journalists, Activists, and Advertisers Mislead Us*.

One skeptic who takes a very journalistic approach is Sharon Hill. Her website, *Doubtful News*,[152] is her attempt to utilize SEO, clickable headlines, and other traffic-generating tactics to combat misinformation, dubious claims, and pseudoscience. "I try to get the story out as soon as possible and utilize important keywords in the story and the title," she said. "Keywords really are key in getting search results. The earlier you can get eyeballs on that story, the more likely your story will come up in a search."

Hill will also reach out to relevant online communities and aggregators to help her work reach a larger audience. "I attempt to promote the story to interested parties, if it might get attention on Reddit or Fark.com, if I think I have an interesting angle or catchy headline," she said.

Advice for Journalists

I asked the journalists and skeptics I contacted for this paper to offer advice about how journalists can be more effective in debunking misinformation. Below is a summary of their feedback, organized by key themes.

Debunk the idea, not the person.

- "Don't get personal (debunk ideas not people). Focus on what makes your information correct, not what makes the misinformation wrong. Do the research. Don't bully with appeals to authority."
  — Robert Todd Carroll

- "Many people are prone to use sarcasm or humor to make fun of beliefs or believers, but I think there is good evidence that this can be counterproductive. I think it's important to let people know it is okay to be wrong—everyone is wrong sometimes. It is also important to explain how it is that something could seem to be true and actually be false, not just to say, 'That's wrong.'"
  — Tim Farley

- "Be respectful. Don't characterize believers (in UFOs, ghosts, Bigfoot, etc.) as stupid or crazy because usually they are not; they are simply misinformed and/or convinced by misleading psychological processes. Adopt a 'Let's figure this out together' approach instead of a dismissive, top-down approach."
  — Benjamin Radford

Look before you leap.

- "The biggest mistake people are prone to make when covering this kind of [viral story] is that often web-based news orgs will jump on this extremely viral news when it is unclear to everyone involved if the news is in fact true or not. The economic environment incentivizes this behavior. Every time a piece of very hot, viral, sexy news comes across my desk my editor will always say, 'You're positive this is real?' We really try to question that and be very cynical and skeptical about viral stories."
  — Caitlin Dewey

- "In a story that you suspect to be fake, look for the hard facts. Is there any name mentioned? [Are] there pictures from the scene or the people involved? Is there any specific place or time mentioned? If there is, research them. If there isn't, it's probably fake. If you find a name in a story that you suspect to be fake, always [try to] contact them."
  — Jack Werner

Remember the cognitive challenges.

- "Watch out for the backfire effect. Know your audience and try to frame the information in a way that is not in conflict with their identity or self image (be that political, religious, cultural, etc)."
  — Tim Farley

- "Check your sources. And then check your source's sources. And beware of biases—have a colleague not involved in your research check your work."
  — Blake Smith

- "Just stick to the facts and do your research, though sometimes it helps to make the distinction between what is possible, what is plausible, and what is probable. Many people seem to think that being possible is a good reason for believing something."
  — Robert Todd Carroll

- "Sadly, I suspect an appeal to emotional triggers is more effective than a cold, rational debunk. We have evolved strongly emotional mental systems for discerning truth and these are more easily swayed by powerful personal testimony than by charts, graphs, outlines, timelines or any of the more reason-based tools we use when trying to appeal to a reader's mind."
  — Blake Smith

Be realistic about impact.

- "Hoaxes and myths cannot be entirely debunked; don't try for full triumph over any single falsehood or you will be bogged down in repetitive and recursive niche debunkery. Publish a single go-to page or fact sheet, thoroughly cited; then link to it, move on. Acknowledge that sometimes a persistent myth is just

part of the texture of a culture."
— Paulo Ordoverza, creator of the @PicPedant Twitter account that calls out fake images.

Think about presentation and promotion.

- "[Journalists need to] consider their own viral tactics. You gotta fight fire with fire here."
  — Alexis Madrigal

- "Tell the story in a transparent and extensive fashion, always explaining how you found the story, why you suspect it's not true, and what methods you used to find the facts. Try to make it as reader-friendly as possible and capture the reader's interest."
  — Jack Werner

Be aware and make use of skeptic resources.

- "Always seek out skeptical commentary from published, experienced, knowledgeable skeptics. Recognize that there is a significant body of skeptical literature available for almost any 'unexplained' or pseudoscientific topic, you just have to look for it. The best sources are the Committee for Skeptical Inquiry, the James Randi Educational Foundation, and the Skeptics Society."
  — Benjamin Radford

Debunking, as these practitioners demonstrate, can have success—both as a traffic-generator and as a means of equipping the public with accurate information. Cognitive challenges detailed in a previous section of this report still apply, but skeptics have begun to adapt by evangelizing practices such as "debunk the idea, not the person," and warning against the backfire effect.

There is promising work being done, but the persistence and pervasiveness of online misinformation demands more effort, particularly on the part of news organizations. More experimentation is necessary to devise better

debunking strategies, and the press can play a role in this. The fact that a good number of the dedicated debunking efforts in the press can be summarized in a few paragraphs is itself reason for concern.

To borrow a formulation from Gigaom's Mathew Ingram, debunking gets better when more people are doing it.[153]

V. Emergent Methodology

The Emergent database was built to enable the tracking and analysis of how the online media reports about rumors and unverified claims. Analysis of data from Emergent formed part of the evidence base for identifying the patterns and phenomena this paper discusses. Beyond the Emergent tool, I drew on my decade of industry experience and time spent researching and reporting on media accuracy and credibility; the academic and industry literature reviewed previously; and interviews with experts in the field. I also used the Emergent database to collect information found in the case studies discussed in the next sections.

The work to populate the database was divided into four parts: identifying rumors being reported in the press; collecting articles that mentioned the rumor; coding articles based on how they covered the rumor; and collecting social shares and updates made to the coverage over time. The database was in full operation by early September of 2014 (with some initial tracking done in August), and continued to be populated for the purposes of this report until the end of November. This was achieved through a mix of human and machine tasks. The predictive applicability of the Emergent data is subject to limitations and elements of sample bias, which are detailed below.

Definition

I defined a rumor as a claim of factual nature that was not yet determined to be true or false. This, for example, could include the pending merger of two companies; the report of someone killed by the Islamic State; or a news story based on the claim of a specific person, such as the Florida woman who claimed she had a third breast implanted.

Categories

Rumor identification and tracking focused on four subject areas: world/national U.S. news, viral news, business/technology news, and news from war zones. These are intense areas of coverage for the online press, and they are also frequent sources of rumor and unverified claims.

We, meaning myself and research assistant Jocelyn Jurich, consciously avoided tracking celebrity rumors and largely steered clear of those involving sports. While these areas are also rife with rumor, in the case of the former the claims are often not verifiable. (A celebrity couple is rumored to have a shouting match at home, for example. The truth about that may never come out.) Sports rumors can also be difficult to resolve, as they can relate to discussion of possible trades or signings that may require months to take effect. These rumor types are better tracked during, say, the NHL trade deadline when transactions happen around a set timeframe. We were concerned we would not be able to create a corpus with enough true/false rumors during the research period. We also avoided political rumors, as this area is already well covered by PolitiFact and factcheck.org.

Identifying Rumors

In order to identify rumors in their early stages, we employed a collection of approaches:

- Setting up searches in TweetDeck to identify tweets that contained the word “unverified,” “unconfirmed,” or “rumor.”
- Collecting and monitoring the RSS feeds of sites that often report on rumors, such as about.com’s Urban Legends page, the Antiviral blog on the Gawker network, snopes.com, and others.
- Setting up Google Alerts for searches: “rumor patrol” (a convention that we saw used in headlines), “Internet rumors,” “unverified,” and “debunk.”
- Following Twitter accounts such as @Hoaxolizer, @DoubtFulNews, @SkepNet, and others that often tweet reports of hoaxes and rumors.
- Attempting to be more aware of unverified claims when engaged in our usual news consumption.

Collecting Articles

Once a rumor (“Claim”) was identified, we created a Story entry in the Emergent database. This involved entering the Claim Statement, a unique Slug for the story (which would also be its URL for the pubic website), and an optional Description to expand on the Claim’s details.

The Claim Statement is a one-sentence expression of the core Claim. An example: “Claim: Hewlett-Packard will split itself into two separate companies.” The Slug for that was “HP-Split”; its Description was “HP’s PC and printer business will be separated from the corporate hardware and services business.”

With that entered, there was now an entry/page for that specific Claim in the database. The page included the information detailed above, along with an area where a researcher could add additional information about the origin of the Claim (and a corresponding URL), and where we could also mark the claim as True, False, or Unverified.

Below that we added a section where articles about the Claim could be entered into the system. With a Claim created, we conducted a search in Google News to identify other news articles that mentioned the Claim. These articles were then entered into the database.

For each article entered, we captured the headline, byline, news outlet, and body text.

Coding Articles

Once entered into the database, the headlines and body text of each article were then coded by hand using what was playfully called a Truthiness Scale. We coded the headline and body text separately with one of four qualifiers, based on how they described the Claim in question. The four qualifiers:

- **I haven't looked:** The default for when we had not yet evaluated the headline or body.
- **The headline/body is for the claim:** The article states that it is true without any kind of hedging.
- **The headline/body is against the claim:** The article states that the claim is false without any kind of hedging.
- **The headline/body is merely reporting the claim exists:** The claim is present but is delivered with some sort of hedging, such as "reportedly," "allegedly," "purportedly," or "according to sources" in the same sentence or paragraph in which the claim is stated.

- **The headline/body does not mention the claim:** The claim is not present in any form. (The most common example of this was when the overall subject was mentioned in a headline, but the specific Claim was not present.)

As previously detailed, many articles contained a "for the claim" headline along with body text that merely reported the claim "exists." In these cases, the Emergent website classified the article as being "for" the claim, since headlines are more read and retained than body text. Headlines are also often what people see shared on social media.

Tracking Articles and Shares

Once entered in the database, we automatically tracked two types of changes to articles over time.

1. Updates to the headline/body text

We wanted to know if new information was added to articles over time. We primarily tracked this by writing parsers that enabled the Emergent system to check the articles at set intervals to see if the headline or body text had changed. Changes between two article versions are called "diffs." If there were diffs, these were shown in a single queue that listed all new, unseen changes. It was then possible to quickly review them to see if the new information added (or removed) constituted a change in the Truthiness rating for that article. In cases where we did not yet have a parser written for a news website, we checked articles manually to look for changes.

2. Social shares

The system captured the number of social shares (and in the case of Facebook, social interactions) generated for an article on Twitter, Facebook, and Google Plus. This was done at the same intervals the parsers were checking for diffs. Social shares were the most easily available metric to help judge interest in rumors and articles about them. The combination of social shares and article diffs enabled us to examine whether the change in a Truthiness rating (from "reporting the claim exists" to "against the claim," for example) had any impact on social share patterns. We also generated a visualization of shares over time to see if the overall number of shares changed after a given Story was declared true or false.

Tracking Updates to Stories

To stay on top of how a Story evolved over time, we created a Google Alert for the specific Claim. This ensured we were notified if new evidence or articles appeared.

Determining True and False

For each Story, we had to make a judgment as to whether the Claim had been definitely proven true or false. We did this on a case-by-case basis. For example, there was a Claim that a U.S. military weapons drop had mistakenly fallen into the hands of the Islamic State. The Claim originated with a *YouTube video* that showed an ISIS fighter offering a look at weapons that had fallen to the ground via a parachute.[154] The Claim was kept as unverified until the Pentagon confirmed that a weapons (and medical supplies) drop had gone awry and ended up in enemy hands.

Simply put, we applied true or false determinations based on evidence and information provided by key sources on the record. We did not mark anything as true or false if the confirming details came from an anonymous source.

Limitations

This methodology and research of course had its limitations. Our effort to identify new rumors was dependent upon those types that surfaced via the methods identified above. This process was designed to find rumors rather than collect a cross-section of news output. Nonetheless, we undoubtedly missed many rumors which may have been worthy of analysis. This also means that our sample of rumors cannot be read as representative of the entire output of the news industry. Furthermore, we cannot imagine how one would measure the degree of statistical bias in this kind of database. The end result is that we can begin to draw conclusions about the large sample we collected, but we are not making predictions based on our sample about (for example) the different rates of shares between rumors and debunkings for the entire news industry.

Also limiting was our inability to write parsers for every news website we entered into the Emergent database. This meant that for some Stories the system would check articles at designated intervals, while other articles within the same Story required manual checking. In some cases, it was possible that we might miss an update by hours or even days. Arriving late to article updates meant we were not able to capture the social shares pattern at the exact interval during which the article was updated. It also meant that we are unable to offer any definitive information about the timeframe of updates and corrections to rumors.

Choosing to use Google News as the primary database for article search about a Claim also inevitably means that we missed some articles. The service does not index every news site, and sometimes articles that have been online for some time do not show up right away in Google News.

At the same time, Google News also returned content from a range of marginal sites that we felt need not be included in our database even when the articles were about an archived Claim. Some were left out, at the discretion of the researchers. This is one reason why this work does not provide overall comparative data about the news outlets most likely to cover rumors, or those that did a bad job dealing with them. A researcher selected the articles added to each rumor Story, so our database does not necessarily encompass all articles written about a given Story.

Overall, these limitations mean that the Emergent database does not provide a flawless picture of how the whole online media industry handles rumor reports.

Furthermore, our study of social shares to measure impact/attention for articles also had some drawbacks. One was a result of the API we used to count Facebook shares. Facebook has deprecated two APIs that enable you to collect the number of shares for a link. That was what we wanted, but there was potential that these APIs might be turned off during the course of our research. In order to combat this possibility, we used a third API that delivers a count of shares, likes, and comments all in one number. This means that the initial share count we retrieved for Facebook was not just for shares.

For the purposes of the following case studies, we separated out shares from likes and comments when comparing data. However, doing so eliminated two other data points that have an effect on how much any given post shows up in people's news feeds. So while the number of shares for an article on Facebook was the right number to compare to the number of shares on Twitter and Google+, the reality is that likes and comments are factors that can increase an article's visibility on the platform.

Another limitation related to share counts was that we did not analyze what people said when they shared a given URL. It's possible that a certain percentage of people sharing a story about a rumor might have done so in a way that expressed skepticism. Or they may have shared a fake news story to complain about the quality of the site. We didn't track what people said when they shared the articles. Anecdotally, we did not see people engaging in debunking when sharing fake news articles; in many cases people shared the headline and nothing more. But we have no data to quantify these observations. This is an avenue for future research.

Finally, some of the following case studies rely on a subset of the rumors tracked for deeper analysis. One in particular is of note, which you'll find in section VIII. "True or Not—the Resolved Claims You'll Never Know About" looks at the rate at which news organizations updated an original article or followed up with a new one once a claim was proven true or false. For that analysis, we narrowed down the data set to six resolved stories in order to present a manageable group to examine. This ensured we were able to apply the protocol of tracking updates to articles and to check back for follow-up articles about the same rumor.

VI. How News Sites Follow-on an Unverified Claim Originating in the Press

Claim: 11 commercial aircraft went missing from the Tripoli airport.

Claim Status at Publication: Unverified

Summary: On September 2, 2014, Bill Gertz of *The Washington Free Beacon* published an alarming report about the fate of "close to a dozen" commercial airplanes that were allegedly (though he never uses this qualifier) at the Tripoli airport when it was taken over by the Islamist group Libyan Dawn.[155]

"Islamist militias in Libya took control of nearly a dozen commercial jetliners last month, and western intelligence agencies recently issued a warning that the jets could be used in terrorist attacks across North Africa," read the lede of his article. Gertz continued:

> Intelligence reports of the stolen jetliners were distributed within the U.S. government over the past two weeks and included a warning that one or more of the aircraft could be used in an attack later this month on the date marking the anniversary of the Sept. 11, 2001, terrorist attacks against New York and Washington, said U.S. officials familiar with the reports.[156]

Gertz quoted one anonymous “official” who confirmed the report. Another unnamed State Department official said, “We can't confirm that.”[157] No other reports or coverage at the time corroborated his story about the disappearance of the airliners and resulting warning by U.S. intelligence of another 9/11-style attack.

However, his claim spread very quickly to media outlets in Africa, the United Kingdom, Canada, Australia, and across the United States. Some media outlets followed the *Free Beacon*'s lead by using headlines that declared the claim to be true. (Those repeating the claim included *USA Today* and The Huffington Post, to name a few of the larger online outlets.) As of this writing, two months after the claim was made, no evidence has emerged to support it.

At the time, images circulating on Twitter appeared to show Libyan Dawn fighters at the airport with at least one intact plane in the background. However, other images from Getty Images[158] showed planes that had been significantly damaged, raising questions about whether they could be used. Gertz's sources remain unknown.

This example demonstrates the low bar required for news websites to follow-on an alarming, yet thinly sourced claim from another news outlet. That the original claim here quickly gained credulous traction among websites with similar political leanings only reinforces the literature about cognitive biases. At the same time, other websites less ideologically aligned also repeated it. Two (HuffPost and *USA Today*) added comments from other sources. But only Snopes.com, which is not a news organization, did the job of surfacing real evidence that called the claim into question. Finally, TheBlaze, a news website operated by Glen Beck's media company, handled this same unverified claim differently in multiple stories—a tendency we observed happening at other outlets throughout our research.

Key Takeaways

1. A claim published by one media outlet will be quickly repeated by others, without additional reporting or verification.

The Emergent database was populated with 19 follow-on stories by news outlets. They broke down into the following Truthiness ratings:

	Reporting the claim as true	Repeating the claim	Debunking the claim
1	The Washington Free Beacon (x2)	Fox News	Snopes
2	MailOnline	WorldNetDaily	
3	The Washington Times	Huffington Post U.K.	
4	TheBlaze	TheBlaze	
5	Metro U.K.	Breitbart	
6	news.com.au	Sun News (Canada)	
7	Al Arabiya	USA Today	
8	allAfrica	Newsmax.com	
9	Inquisitr		

Of all the articles published about the missing planes, only two added additional reporting. Snopes was the only outlet to examine the claim's veracity. *MailOnline* and The Huffington Post U.K. aggregated one new piece of information that was apparently broadcast or published by Al Jazeera.[159] (We were not able to locate the information on Al Jazeera's website). HuffPost reported:

> Al Jazeera reported that the planes are now being held by a group called the Masked Men Brigade who plan to use them in terror attacks.
>
> Moroccan military expert Abderrahmane Mekkaoui told Al Jazeera there is "credible intelligence" that the Masked Men Brigade "is plotting to use the planes in attacks on the Maghreb state on the 9/11 anniversary."[160]

While that did not come to pass, readers of the HuffPost story may have left with an impression that the claim was not only true, but highly threatening.

USA Today's report added two quotes from named officials that emphasized its unconfirmed nature:

> State Department spokeswoman Marie Harf said, "We have nothing to confirm these reports about missing airliners."
>
> A spokeswoman for the White House National Security Council, Bernadette Meehan, also said there's been no confirmation that aircraft had been stolen.[160]

USA Today's report did not delineate the claim as false, but it did introduce information from named sources that raised doubts about its veracity.

Finally, Snopes gave the claim a "Mostly False" rating.[162] The site analyzed claims it gathered from various news articles, as well as details from an online forum frequented by aviation buffs and pilots.[163] The latter offered evidence that at least some commercial airliners had been moved away from the Tripoli airport in the weeks before it fell.

Snopes did the best job of reporting out this claim. Others largely repeated Gertz's story or sought comments from U.S. officials, which contained little or no information. Clearly, conservative news outlets such as Fox News, Breitbart, TheBlaze, and Newsmax were eager to follow-on the *Free Beacon* story likely because the report made the Obama administration look bad.

However, it wasn't only U.S. conservative websites that followed-on and treated the claim with seriousness. As noted earlier, our sample of news coverage showed it quickly spread to four continents. A claim that had no evidence was therefore lodged in the minds of many people. This is a case where news outlets should have applied reporting/verification, rather than propagate a fear-inducing claim of questionable veracity.

2. One outlet may treat the same claim differently.

TheBlaze published two articles that addressed the claim in different ways. An initial news report attributed it to the *Free Beacon* and flagged it as unverified.[164] Its headline read, "Report: Nearly a Dozen Commercial Airliners Missing Ahead of 9/11 Anniversary After Islamists Overrun Libyan Airport."

But the second article summarized an episode of *The Glenn Beck Program*.[165] He and Republican Michelle Bachmann discussed the report of the missing planes. The headline of that article read, "What Glenn Beck Fears May Be Done With the 11 Missing Jets." (The other headline expressed the claim as an unverified report.) While the declarative assertion was paired with more cautious text in the body of the article, the damage had been done. In the end, the initial article with the more responsible headline garnered an impressive 28,554 shares, compared with a still notable 4,033 shares for the article with the declarative headline.

News organizations often write multiple articles in which the veracity of the same unverified claim is treated differently. Often it was the headlines that told inconsistent stories, as was the case with TheBlaze. This is likely due, in part, to the style of those writing headlines. It demonstrates a lack of standardization within newsrooms when covering rumors and unverified claims.

VII. The Alarming Dissonance Between Headlines and Body Text

One of the more surprising trends our research revealed was the tendency for news sites to pair declarative headlines with body text that expresses skepticism about the veracity of the information. (To a lesser extent, we saw a cautionary headline with declarative body text.)

Originally, we set up the Emergent database to apply a single Truthiness rating to each article. After a couple of weeks of identifying rumors and archiving articles, it became clear that each article needed two Truthiness ratings: one for the headline and one for the body text. The headlines and body text were often in conflict.

This has serious implications for how news consumers process information about rumors. The overall concern, which academic research backs up, is that readers retain information from headlines more so than from body text. If readers first see a declarative headline, subsequent nuance in the article's text is unlikely to modify the original message.

Also worrisome is that the headline is the default text shared on social media. Even if people don't read the article or click on a shared link, there's still an element of ambient awareness at play as they scroll by a declarative headline on Twitter or through a Facebook news feed. They are therefore exposed to what is, in many cases, misinformation as a direct result of journalists' actions.

The Data

Out of the 1,660 articles we added to our database during the research period, we identified 213 that contained headline/body text dissonance. This means that just under 13 percent of all articles we tracked used a misaligned headline/body text formulation.

Below is an analysis of six types of headline/body dissonances and their prevalence in the database.

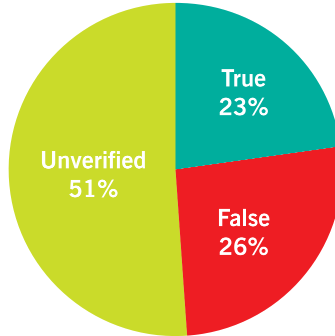
The six types are:

- A headline declares a rumor to be true and the body text repeats the rumor (True/Observing)
- A headline declares a rumor to be false and the body text repeats the rumor (False/Observing)
- A headline repeats a rumor and the body text declares it to be false (Observing/False)
- A headline repeats a rumor and the body text declares it to be true (Observing/True)
- A headline declares a rumor to be true and the body text declares it to be false (True/False)
- A headline declares a rumor to be false and the body text declares it to be true (False/True)

True/Observing

We identified that 77 out of the total 113 rumors in the database (68 percent) contained at least one article with a true/observing formulation. (A headline declaring it true and body text that merely repeated the rumor.)

That meant more than 70 percent of the rumors we tracked saw at least one media report use the true/observing combination. Even more disconcerting is the breakdown of these rumors in terms of their veracity:



As shown in the above chart, slightly more than half of the rumors that contained articles with true/observing dissonance were still marked unverified at the time of publication. (As noted in the methodology section, rumors were by default marked unverified and were then resolved to be true or false if evidence emerged to warrant a change.) An additional 26 percent of these rumors were confirmed false, which is of even greater concern. Taken together, at least one news organization wrongly portrayed a rumor as true a little more than 17 percent of the time for all the rumors we tracked.

Combining the data about rumors that turned out to be false with those that remain unverified, 52 percent of all rumors we tracked in this research were associated with at least one instance of this type of incorrect headline/body formulation.

Consequently, the rumor that saw the most number of articles written with a declarative true headline and cautionary body text turned out to be false. This was the hoax claim by a woman who said she had an implanted third breast. For this claim we saw 10 different news websites write a story with a headline that declared it to be true.

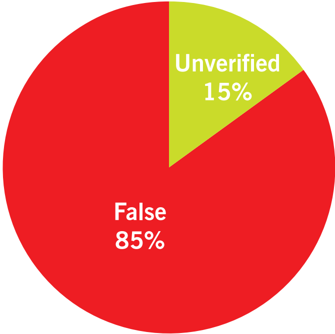
False/Observing

This formulation was far less common. We only saw three rumors, or 2.6 percent of the total number of rumors tracked, for which an article contained a headline that declared the rumor false only to then hedge that assertion within the body text. These three rumors split evenly between unverified, true, and false at the time of publication.

Observing/False

This formulation is by far the most common when rumors turn out to be false, according to our data. Thirteen of a total of 17 rumors with this formulation (i.e., an article's headline announces that the claim is being reported/ the article's body text relates that it's not true) ended up being untrue, with the remainder unverified as of publication. (We observed this formulation present at least once in 15 percent of all rumors tracked.)

Snopes.com appeared most in this data set. The site follows a style whereby it offers a neutral, and often pun-laden headline and then presents a verdict on a rumor in the body text. For example, its article about the woman claiming a third breast carried the headline, "Breast Chancer." All of the site's articles follow this format. Snopes was present in six of the 17 rumors containing at least one instance of observing/false.



However, we found that this formulation most commonly occurs when news sites do not update headlines to reflect debunking information they've added to the article's body. In some cases, news organizations added the word "Updated" to the headline, but this offers little if any value to readers.

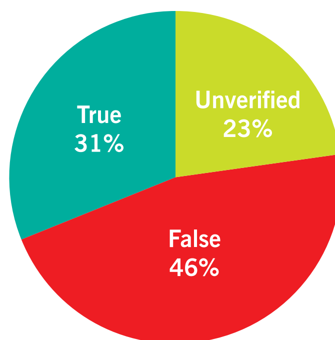
Particularly problematic is when this lazy "Update" format combines with an innuendo-based/questioning headline. An example is this headline from *The Dallas Morning News*: "Update: Frisco paramedics transporting patient believed to be exhibiting Ebola-like symptoms." (That patient turned out to not have Ebola, but readers needed to read the body text to understand this fact.)

Another example is this headline from BleedingCool.com, which was the source of a false rumor that the Batmobile was stolen from a film set: "Has The Batman Vs. Superman Batmobile Been Stolen In Detroit? (UPDATE)."

Simply put, the practice of adding "Update" should not be applied when new information contradicts the original headline.

Observing/True

As with the above example, this formulation often occurs when the article body text is updated with new information while the headline remains the same. There were, however, more rumors formulated as observing/true than observing/false. A total of 25 rumors included an article with this combination, which accounts for 22 percent of rumors in the database. Twelve of these rumors were confirmed true, nine remain unverified, and four were false.



True/False

Less common was a headline declaring a rumor to be true with body text that declared it false. This clearly problematic formulation occurred at least once (and often just once) in a total of 12 rumors tracked in the database, which meant that just under 13 percent of all rumors contained at least one article with this formulation.

Of these, nine were confirmed false, two remained unverified, and one was confirmed true. That this formulation appeared in reporting about so many rumors which turned out to be false likely speaks to, again, the headline not being updated to reflect new body text. It also results from the above-mentioned tendency for news sites to add "Updated" to a headline when new information is added to the article. Here are three examples in which the rumor was confirmed false in the body text in a subsequent version of the article while the headline was only "Updated":

- "WATCH: Bird Launches Airstrike on Putin's Shoulder (UPDATED)" (*Time* magazine)
- "Woman Gets Third Boob to Appear Unattractive to Men [Updated]" (*New York* magazine)
- "Weather Reporter Caught Writing His Name In The Snow Was NOT Ready To Go On Camera (UPDATED)" (The Huffington Post)

False/True

We did not identify any articles that contained this formulation.

Why This All Matters

Headlines are what people see/share on social media.

Headlines are optimized for social sharing. They are written to grab attention and to inspire action. Headlines also load automatically when users click on an article's sharing button. Digital news organizations such as Quartz, The Huffington Post, and Upworthy expend significant effort into crafting headlines that generate engagement. Upworthy and HuffPo, among many others, use A/B testing to optimize headlines that result in clicks and shares.[166] Quartz has an approach to headlines that dictates they must be tweetable.[167]

Even if people don't click on the link via social media, they still presumably see, and possibly even retain, its headline. And what of those who do click? The reality is very few of them will actually read the full article, thus making the headline their primary exposure to the information.

Tony Haile, the CEO of online analytics company Chartbeat, wrote an article for Time detailing that there is virtually no correlation between clicking and reading.[168]

"Chartbeat looked at deep user behavior across 2 billion visits across the web over the course of a month and found that most people who click don't read," he wrote. "In fact, a stunning 55 percent spent fewer than 15 seconds actively on a page."[169]

The headline is what sticks and what generates clicks. And when it comes to rumors, these headlines are too often wrong or misleading.

Headlines affect memory and retention.

Research about the impact of newspaper headlines reinforces their importance in communicating the details of a story.

A 1993 linguistic study of newspaper headlines found that "for the modern newspaper reader, reading the headline of a news item replaces the reading of the whole story."[170] This remains true, even as news is increasingly digital and unbundled from printed pages laid out by editors. Headlines, then as now, help provide an efficient and impactful summary of the story. People on social media and media websites engage in the act of scanning headlines just as newspaper readers have long done.

"Newspaper readers are flooded on a daily basis with an amount of new information which they have neither the time nor the energy to process," wrote Daniel Dor in his 2003 paper, "On Newspaper Headlines as Relevance Optimizers."[171] "Newspaper headlines help them get the maximum out of this informational flood—for the minimal cognitive investment."[172]

Headlines remain the primary communication method for news articles—and they have a significant effect on memory and retention. A 2014 study by a group of psychologists exposed subjects to a series of misleading headlines and then tested their retention of the information. The researchers found that "misleading headlines affect readers' memory for news articles or their inferential reasoning."[173] This, the psychologists said, is partly because "headlines constrain further information processing, biasing readers towards a specific interpretation, but also because readers struggle to update their memory in order to correct initial misconceptions."[174]

The compact and clear nature of headlines makes an immediate impression on a reader. It frames how they understand any subsequent information, if they keep reading at all. Detailed body text is therefore unlikely to mitigate the damage from a misleading or false headline.

The experiments conducted for the psychologists' paper did not exactly replicate the headline/body dissonance seen in the Emergent database. Their findings, however, offer further evidence that headlines have a powerful effect on memory and the overall processing of information about an article.

Trust and accuracy are sacrificed for clickability.

There is, of course, the fundamental issue of honesty and accuracy. Telling people something is true, only to walk it back in an article is dishonest and inaccurate. Or vice versa. People who read closely enough to see the dissonance may be left feeling tricked or manipulated. They may see that the headline is written to drive clicks and shares, rather than to communicate correct information. In other cases, they may note that the website hasn't bothered to update the headline, or that it opted to insert a disingenuous "Update," when it's more appropriate to rewrite the headline and note the change/correction in the body text.

Headlines have long been written to grab attention. Journalists optimize them for social media by writing ones that appeal to emotion and are designed to inspire action. When it comes to generating clicks and engagement, a declarative statement is likely more powerful than one laced with hedging language. However, in the case of rumors and unverified claims, it's also inaccurate.

Trend of Concern: Question Headlines

When a clearly Photoshopped image of a gigantic crab supposedly living in the waters near a U.K. town began making the rounds online, aol.com wrote about it under the following headline: "Could Crabzilla, a 50-foot-long crab be real?"[175] The answer was clearly no. But, in what is undoubtedly a continuation of the tabloid tradition of alarming innuendo headlines, AOL decided it was a question worth asking.

In another example of the same headline type, Slate asked, "Did Comcast Get a Man Fired From His Job for Complaining About Its Service?"[176] That claim remains unverified as of this writing.

Rumor headlines are often expressed as questions. These sometimes take the form of innuendo about a person or entity. Research into innuendo headlines has found that they tend to implicate the person involved with the claim. Asking the question implies that it might be true; this forever links the person or entity with the innuendo thanks to how our brains process information.

In order to understand the question or innuendo, we have to first digest the content as being true. Then we process the denial, hedging, or question. We therefore first understand a questioning headline as a declarative statement. Our brains retroactively apply its hedging nature, if at all.

"Information that is conveyed through questions, denials, or even qualifications (e.g., this possibility may not be true) is understood first, and is then cognitively reprocessed and imbued with the internal equivalent of the logical 'not,' " wrote psychologist Daniel H. Wegner in his paper "Innuendo and Damage to Reputations."[177] "The 'not' qualifier becomes, then, what may be a superfluous addendum to the stored information."[178]

This is also true for headlines that present a claim with hedging words such as "reportedly." People read the claim first and then append its qualifications. Here is yet another argument in favor of journalists' applying great restraint and consideration in choosing which rumors and claims to amplify with coverage, and which to hold back on.

A final aspect of question/innuendo headlines is that people don't necessarily interpret the veracity of the claim based on its source. "Whether a particular innuendo was attributed to *The New York Times* or the *National Enquirer*, it appeared to be equally effective," wrote Wegner, who has conducted research into innuendos and leading questions.[179] (He examined their place in news headlines in "Incrimination Through Innuendo: Can Media Questions Become Public Answers?" which was published in the *Journal of Personality and Social Psychology*.)[180]

The fact that innuendo headlines have the same effect regardless of source is most notable when it comes to search results and social networks, where people see a variety of headlines from different outlets. The idea that the reader will consider the source in these situations is, unfortunately, unrealistic. The end result is that exposure to question/innuendo headlines can have a real effect on a person's perception of the story or claim.

Clearly, journalists need better strategies for offering rumor headlines that don't spread misinformation and that don't implant misperceptions in readers' minds. I offer some alternate approaches in the Conclusions and Recommendations section of this report.

VIII. True or Not—the Resolved Claims You'll Never Know About

After populating the Emergent database, we sought to answer how often news websites update original stories or follow up with new articles when a rumor or unverified claim is confirmed or debunked. It turns out it's not as often as one might expect.

We selected a group of six claims that were resolved as either true or false during our research period. We returned to their host websites to check for updates to the original articles or new articles about the claim with the updated information. The goal was to see what percentage of news sites stayed with a rumor long enough to ensure they communicated the correct information to readers.

With so many news organizations rushing to cover rumors in their early, unverified stages, it's important to know whether they also follow up and close the loop with readers when a claim is resolved. Otherwise the web will be littered with rumor articles that are often incorrect, and very few stories that confirm or debunk those initial claims.

Obviously, there is no guarantee that readers will come back to an article to see if it has been updated. (For this to happen, news organizations must make an effort to share and otherwise promote the updated article.) It's also unclear how many people who read an initial article about a claim see a follow-up from that or other outlets hours, days, or even weeks later.

The best scenario for readers and for an informed society is to see as many news organizations as possible follow up on the rumors they point to at their unverified stages. Unfortunately, our data show that this is not the current scenario. This is troubling for several reasons. One problem is that mistaken, declarative headlines or body text are not being corrected. A second issue is that online articles exist permanently and can be accessed at any time. Search, social, and hyperlinks may be driving people to stories that are out of date or demonstrably incorrect. It's also notable that these findings reveal news organizations have not yet found consistent workflows that enable them to keep evolving claims/stories, and to go back and correct articles that wrongly present unverified information.

1. Claim: Mass grave found in Mexico holds bodies of missing students.

Status: False

Originated: October 5

Resolved: October 14

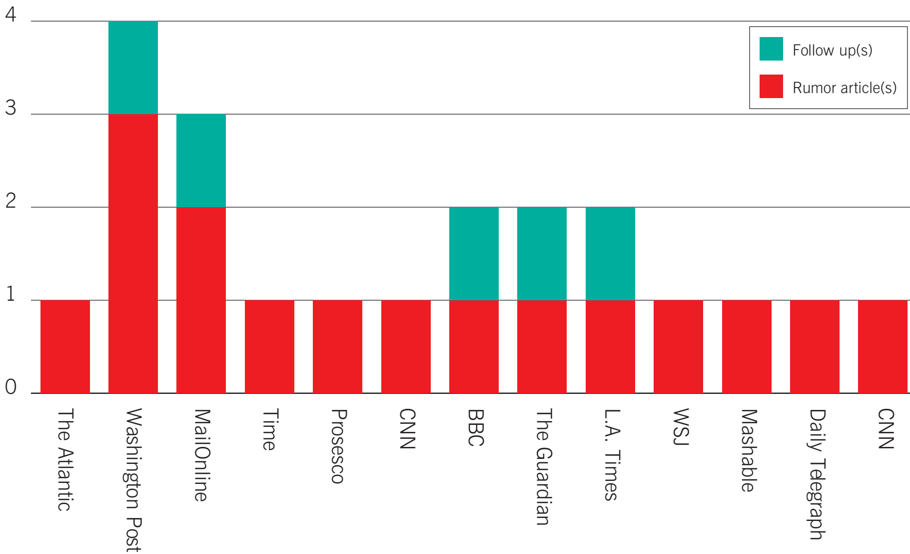
Number of news organizations that covered the claim: 14

Number that updated/followed up: 5

Percentage that updated/followed up: 35.7

We identified initial articles about this claim from 14 different news outlets. Of those, only five published updates or follow-up articles once the rumor was proven false. As shown in the below chart, *The Washington Post* and *MailOnline* each published multiple articles when the rumor first emerged. Disappointingly, the *Post* initially published two articles that reported the rumor as true and one that simply repeated the claim. *MailOnline* published one article that reported the claim as true and one that also repeated

it. In each case, they published one follow-up article each once the rumor was proven false. In neither case were the earlier stories updated. The BBC, *The Guardian*, and the *Los Angeles Times* also returned to the story.



2. Claim: A Florida woman got a third breast.

Status: False

Originated: September 22

Resolved: September 23

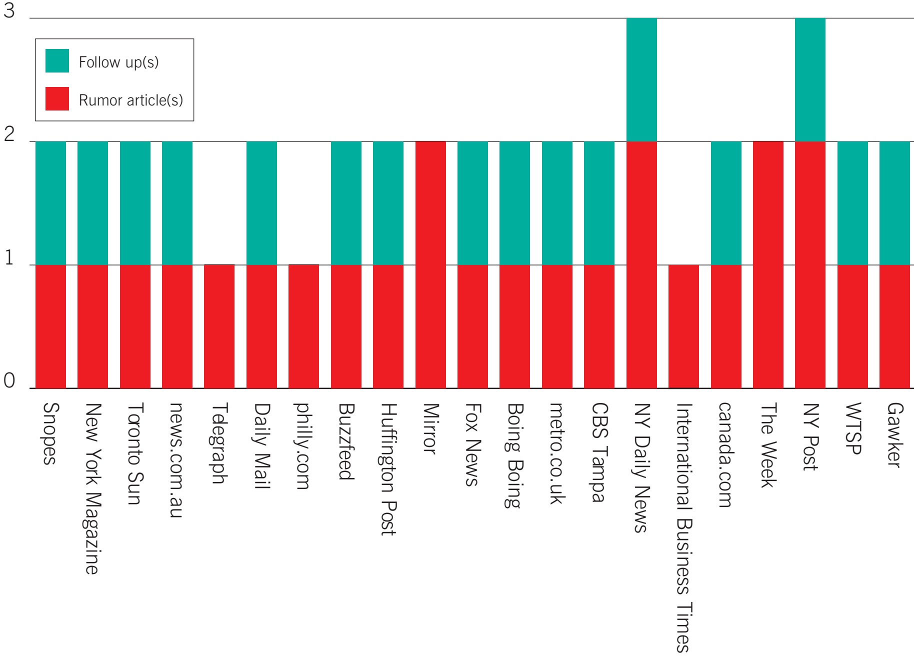
Number of news organizations that covered the claim: 22

Number that updated/followed up: 19

Percentage that updated/followed up: 71.4

This story saw an alarming number of news outlets report the claim as true very early on. We identified an initial eight news organizations that treated it as true. Fortunately, all of them published updates or follow-ups, though for those initial readers the damage was likely done. This story generated a

fairly high percentage of updates or follow-ups, as we only saw three of the 22 news organizations that initially covered the claim fail to update its status as false (the *Daily Mirror*, *The Daily Telegraph* and *The Week*).



3. Claim: ISIS captured a U.S. airdrop of weapons intended for Kurdish fighters.

Status: True

Originated: October 21

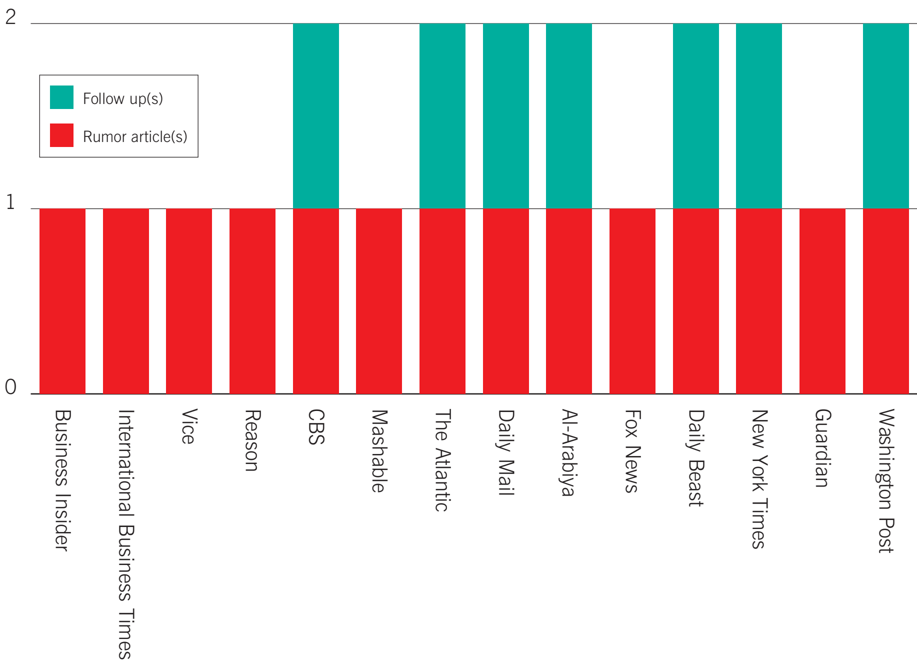
Resolved: October 22

Number of news organizations that covered the claim: 13

Number that updated/followed up: 7

Percentage that updated/followed up: 54

We logged articles from 13 news organizations that repeated this claim, none of whom reported it as true in its early stage. Once the claim was confirmed the next day, seven of those outlets came back with follow-up stories. The outlets that failed to update/follow up included Business Insider, *International Business Times*, VICE, *Reason*, Mashable, Fox News, and *The Guardian*.



4. Claim: The Batmobile was stolen.

Status: False

Originated: October 21

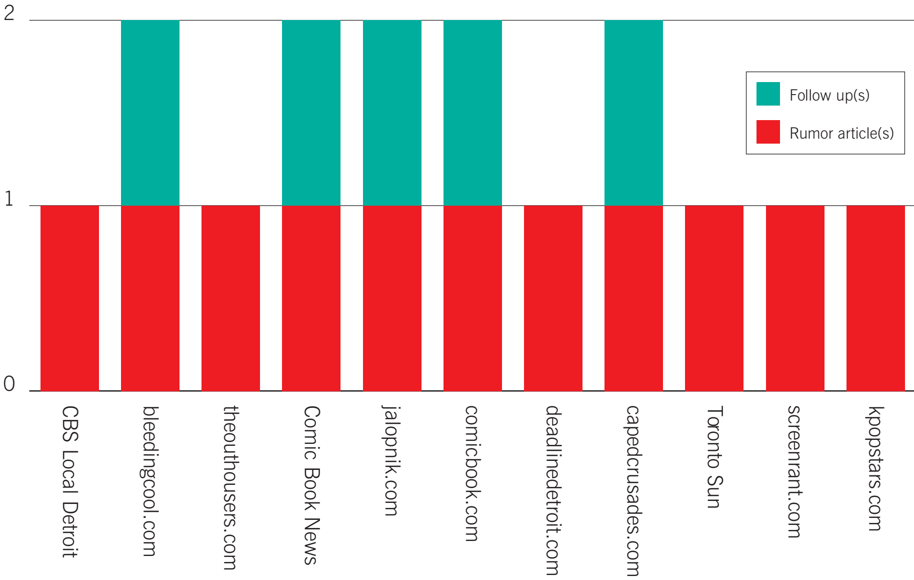
Resolved: October 22

Number of news organizations that covered the claim: 11

Number that updated/followed up: 6

Percentage that updated/followed up: 54.6

This claim was notable for the low number of traditional and online media that covered it. It spread primarily among comics and film websites (which were listed in Google News). However, news organizations still played a notable role. CBS Detroit was one of two outlets to cover the claim in its unverified stage—and it failed to update the story once it was proven false. The same can be said of the *Toronto Sun*. It reported the claim but did not issue an update. The other outlet of note was the *Detroit Free Press*, which provided the evidence to debunk the claim. As noted above, just over half of all sites to cover the claim initially came back with an update or follow-up.



5. Claim: ISIS fighters were caught trying to enter the U.S. via the U.S.-Mexico border.

Status: False

Originated: October 7

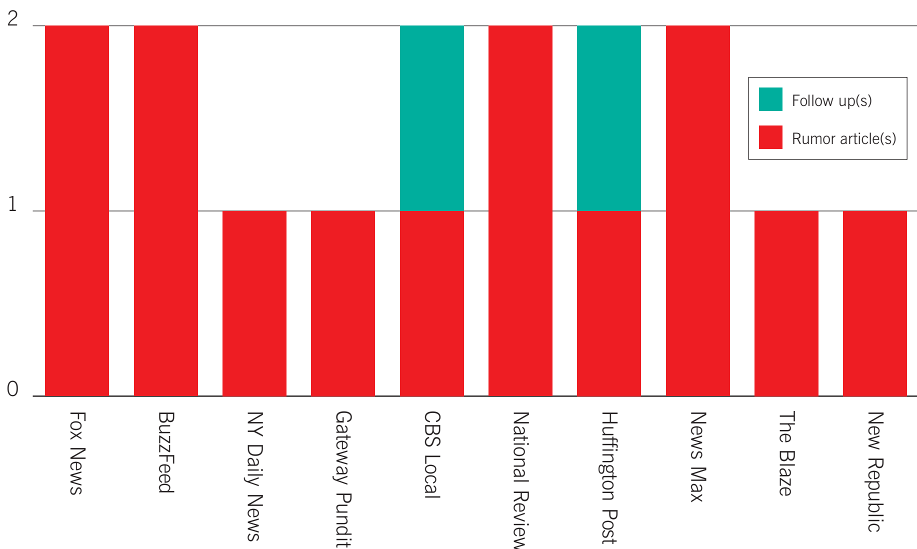
Resolved: October 8

Number of news organizations that covered the claim: 10

Number that updated/followed up: 2

Percentage that updated/followed up: 20

We entered in initial articles from 10 outlets for this claim. Some, such as Fox News, Newsmax, National Review, and BuzzFeed wrote two articles about the claim before it was debunked. None of these outlets followed up to note that it was false. Others who failed to update or follow up were the *New York Daily News*, Gateway Pundit, TheBlaze, and *The New Republic*. As detailed below, it's possible that the partisan aspect of the claim influenced the lack of updates.



6. Claim: Hewlett-Packard will split itself into two separate companies.

Status: True

Originated: October 5

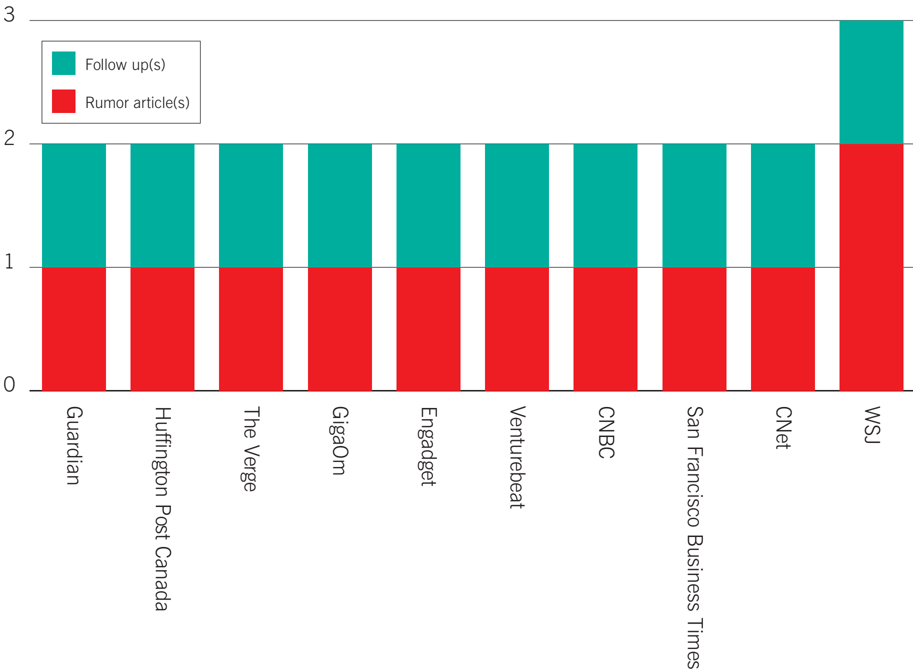
Resolved: October 6

Number of news organizations that covered the claim: 10

Number that updated/followed up: 10

Percentage that updated/followed up: 100

This claim originated with the *Wall Street Journal*, which cited anonymous company sources. The next day the company announced that it would split itself in two. As noted above, all of the news outlets that covered the initial claim updated their original articles or followed up with supplementary articles to note HP's confirmation.



Summary

Overall, the rate of updates/follow-ups was disappointing. This means news organizations are providing accurate, current information about resolved rumors to readers only slightly better than half of the time. They are attracted to a claim when it's unverified, but there is less interest once it has been proven true or false. Below are four other trends of note in the data.

Updates versus follow-ups: The vast majority of news organizations that returned to a rumor did so by publishing a follow-up story. This means the original, often incorrect story still exists on their websites and may show up in search results. (We rarely saw links added from the initial article to a follow-up one, though we observed The Huffington Post apply this practice.) Anecdotally, it seems that native online organizations, such as BuzzFeed, Mashable, and a variety of tech news sites, went back and updated articles more frequently than the online operations of legacy publishers.

Time to resolution: Rumors that were resolved as true or false within a roughly 24-hour period tended to see more updates/follow-ups. The ISIS fighters border story was the exception to this. (More on that below.) The other claim with a low update rate, the mass grave in Mexico, was the rumor that took the longest to resolve. It's fair to assume a news organization may lose track of a story after nine days. This is particularly true if the claim relates to a foreign country.

Partisanship: The explosive claim that ISIS fighters had been apprehended at the U.S.-Mexico border was refuted within 24 hours and yet only 20 percent of news organizations that wrote an initial story came back to it. It's possible that the partisan element of the claim led some conservative outlets to fail to update their articles with denials from top Obama officials. However, this is an aspect that requires more research.

The HP secret sauce: The only claim to see all news organizations update or follow up was the report that Hewlett-Packard would split into two separate companies. This claim possessed several attributes that seemed to help it

attract subsequent coverage by journalists: It was resolved within 24 hours with a major public announcement from the company; it originated in a report from a publication (*Wall Street Journal*) that has high credibility in the business world; it involved a major, publicly traded company; and the news itself would continue to unfold in the coming weeks and months. There was a clear financial interest in this claim and its accuracy, which may have been a factor in newsroom decision-making about how much attention and coverage to give it. This is another area worthy of additional study.

IX. How Online Media Hedges

Journalists use specific words and attribution formulations to signal to readers that the content they are consuming contains unverified information. They deploy words like "reportedly" or "allegedly," or note that the information comes "according to sources." A headline might begin with the phrase, "Report:" and then go on to repeat a claim.

These approaches are well established in journalism. What's not clear, however, is how they affect readers' understanding of what they are reading. Perhaps readers do register the hedging; or maybe they blow past it and read the information as true, only to process the hedging as an afterthought—or not at all. That is certainly what previously detailed research into innuendo headlines has found.[181]

What is clear is that news organizations use a wide variety of hedging language and attribution formulations to convey ambivalence and uncertainty. Few appear to have created templates and preferred formulations for communicating rumors and unverified claims. This variance from one outlet to the next, and even within the same organization, prevents readers from directly understanding a writer's intent. Some hedging words and formulations may be more effective than others, but we're not aware of any research to help guide what newsrooms should do.

As a step in that direction, we extracted all articles in the database with headlines that were coded as repeating claims. This means the articles contained at least one hedging or attribution element. Our initial data set included 1,673 "observing" headlines, out of the total 4,307 articles in the database. However, both numbers include multiple versions of a single article.

We limited our data set to include only the first version of observing headlines in the database. This left us with 655 headlines that included some form of hedging or attribution. We then imported them into Overview to extract the hedging words and examine their frequency. Overview is a free platform that offers a variety of tools to analyze a large group of documents.

In this case, we used it to generate specific search functions to isolate hedging words and attribution formations, and to easily count the occurrences of each. In cases where the search functionality did not enable us to isolate examples, we did a manual count. (This occurred when trying to identify headlines that used quotations, for example.)

Most Common Hedging Words

The most used hedging word in headlines was "report" and its variations (such as reportedly, reporting, etc.). It appeared in 29.2 percent of headlines. Rounding out the top five (with their rate of appearance) were:

- Report (and its variations): 29.2%
- Use of quotes around a claim: 11.7%
- Say (and its variations): 11.1%
- Use of a question: 10.4%
- Claim (and its variations): 8.7%

The prevalence of "report" and its variations supports the finding that many articles about rumors and claims are simply aggregations of other articles. Journalists write about the claim because it has already been "reported" elsewhere. (This is so-called "third-party verification.")

The use of quotes around a claim and question headlines are two problematic approaches to communicating the unverified nature of information. Inserting quote marks around an alarming claim does nothing to convey its level of veracity. It seems unlikely that readers process quotes as a strong indication of hedging. The problematic nature of question headlines was previously addressed in this paper. It reinforces that news organizations should deploy them sparingly, especially when accusations are involved.

It's also notable that stronger hedging words are nowhere to be found in our top five roundup. "Allege" and "rumor" were both used in fewer than 5 percent of headlines. A future path of research might present hedging headlines to readers and gauge their reaction to different words. This would provide much needed data about which (if any) hedging words and formulations are most effective in communicating ambiguity.

Below is a table showing the hedging words used, their frequency in the database, and a sample headline for each.

Hedging word(s)	Occurrences	Sample headline
Report (and variations)	191	Amazon Reportedly Planning An Ad-Supported Video Service That Will Be Cheaper Than Netflix
Use of quotes on claim	77	Isis "behead their own fighters" for spying and embezzlement in Syria
Say (and variations)	73	Doctor took selfie with Joan Rivers while star was under anesthesia, CNN says
Use of a question	68	Woman with three breasts: Real or hoax?
Claim (and variations)	57	Boy who suffered powerful electric shock claims he now has "superpowers" like X-Men's Magneto as metal objects stick to him
May	32	6 hidden mass graves may hold missing Mexican students
Allege (and variations)	31	Audio recording allegedly captures moment Michael Brown was shot
Rumor	29	Rumor: Apple in late-stage talks to buy Path social platform
Source or Official	16	Source: Pot in NYC may soon net just a ticket, not arrest

Hedging word(s)	Occurrences	Sample headline
Could	8	EXCLUSIVE: Lenovo Could Make An Offer For BlackBerry As Early As This Week
Appears	6	Crabzilla: Photo Appears To Show Giant, 50-Foot Crab Lurking In British Waters
Believed	5	James Foley Killer "Jihadi John" Believed to Be Former London Rapper Abdel-Majed Abdel Bary
Possible	5	Nicaraguan commission on possible meteorite crash presents rock samples
Purported	3	Purported Lisa Bonet Twitter Account Suspended After Cryptic Cosby Tweet

Combinations of Hedging Words

Included in the above totals are headlines that presented more than one hedging term. For example (emphasis added):

- "**Report**: **Possible** audio tape of Michael Brown shooting"
- "Wednesday Apple **Rumors**: Apple **May** Be Ready to Buy Path"
- "Islamist websites **claim** Israeli-Canadian woman kidnapped by IS: **report**."

These double-barreled hedges are confusing to read. The final example above attempts to convey two separate elements of uncertainty. First, it seeks to communicate that the woman's kidnapping is a claim that originated on Islamist websites; and second, it tries to show that the existence of this claim is itself being attributed to other outlets. Will a reader really take the time to unpack this level of cognitive complexity? It's highly unlikely.

At a certain point, hedging gets in the way of comprehension. When this happens, our brains are more apt to focus on the claim itself. This is exactly why it's a concern that so many news websites think that adding "reported" or "claim" to a headline is enough to green-light rumor propagation.

X. The Challenge of Debunking Fake News

Claim: Anonymous street artist Banksy was arrested.

Claim Status at Publication: False

Summary: NationalReport.net, a fake news website, published a story this past October declaring that famed street artist Banksy had been arrested in London.[182] "After hours of questioning and a raid of his London art studio, his true name and identity have finally been revealed," it claimed.

The next paragraph was key in helping the story to spread:

> The City of London Police say Banksy's real name is Paul William Horner, a 36-year-old male born in Liverpool, England. The BBC has confirmed this information with Banky's PR agent Jo Brooks along with Pest Control, a website that acts as a handling service on behalf of the artist.[183]

The above offers the trappings of veracity. It attributes the real name of the artist to a police statement and goes on to say that the BBC confirmed the information with his publicist and a company that works on his behalf. This reads like a real news story, and it name-checks credible sources to give the reader confidence.

The story also includes hyperlinks with its mentions of the BBC, Jo Brooks, and Pest Control. In the case of the BBC, one might assume the link is to a specific BBC article; in fact, it just directs to its homepage. The other

links connect to generic sites about Brooks and Pest Control. The writer made a bet that few would click the links to check the claims, and he was likely correct.

However, there is one glaring item in the paragraph that undercuts its credibility. The mention of Paul Horner as Banksy's real name is a giant red flag for anyone not already familiar enough with National Report to know that everything it publishes is fake. Horner is a well-documented hoaxer, and, according to *The Washington Post*, the lead writer for National Report.[184] In February of 2013 Banksy also allegedly outed himself as Paul Horner in a fake press release the writer distributed.[185] It fooled many news organizations.

After Horner's latest Banksy ruse, the *Post* published a profile of him. It listed some of his other tricks:

> You may also have heard that Horner is a Facebook executive, bent on introducing a monthly user fee. Or a hapless 15-year-old, sentenced to life in prison for "SWATing" a video game opponent. If you've read up on the "Big Lebowski" sequel, coming soon to a theater near you*, you may also believe he's an up-and-coming actor, recently cast to play a big role in "The Big Lebowski 2."[186]

A simple search of Horner's name brings up his past. A simple Googling of Banksy's alleged arrest also shows there is nothing to corroborate it. Yet it fooled many and racked up a huge amount of shares, mostly on Facebook. The claim also hoodwinked influential people, such as a former British member of Parliament and current newspaper columnist who has more than 80,000 followers on Twitter:

This specific hoax story ultimately attracted a comparatively high number of debunking articles from the press. It was the largest debunking effort for a fake article we tracked—and it was also the only case where debunkings generated a higher share count than the fake article. Along with offering an example of seemingly effective debunkings, this case offers a look at the variety of debunking headlines the press utilized in this and related examples.

Key Takeaways

1. It required effort from multiple large websites to (barely) overtake the fake news article's spread.

What's notable about this and other fake news stories is how a single, untrustworthy webpage with a newsworthy claim can generate a massive number of shares on social networks. This only reinforces the previously stated reality that hoaxes are increasingly engineered to spread, and can therefore be very effective. Hoax creators insert credible-sounding references to authorities like the police and the BBC, while also appealing to people's emotions to encourage their content to spread.

As detailed in the methodology section of this paper, we did not perform a semantic analysis of tweets and Facebook posts that share fake news links. This would have enabled us to quantify how many, if any, people shared the link with a comment that questioned its veracity. (Our anecdotal sense is that this was relatively rare.)

In the end, we logged 10 debunking articles about this hoax from news websites. Below is a look at the sites and their relevant share totals, compared to those from the National Report story. It required debunkings from several large U.K. websites to overtake the share count of one fake news article. One debunking is not enough, and the participating sites included several big players in the U.K. online news ecosystem. Even with all of those factors working in the debunkings' favor, they just barely exceeded the total share count of the single fake article.

Outlet	Treated the Claim as True	FB Shares	Twitter Shares	Total
National Report	1	42,912	17,490	60,402
artFido	0	5,826	327	6,153
BuzzFeed	0	582	95	677
The Independent	0	28,350	2,659	31,009
International Business Times	0	11,687	928	12,615
Daily Mirror	0	2,919	765	3,684
The Daily Telegraph	0	2,384	418	2,802
London24	0	1,064	124	1,188
The Huffington Post	0	994	96	1,090
The Independent (i100)	0	334	858	1,192
The Huffington Post U.K.	0	499	44	543
		Total shares for fake news	60,402	
		Total shares for debunkings	60,953	

2. A hoax with a geographic focus can inspire action from the press.

As with the above example, we tracked another National Report hoax that included a specific location at the core of its story. That fake story claimed that Purdon, Texas, had been quarantined after confirmed cases of Ebola in the area. (The other article claimed that Banksy was arrested in London and mentioned the local police and the BBC.)

As opposed to fake news articles about more general items—for example, the hoax report of the discovery of an ancient text about a miracle performed by Jesus[187]—these stories include a geographic connection. This inspired local press to take action, and therefore increased the number of debunkings. In the case of the Banksy hoax, the London press produced a high number of debunkings that were key in helping to drive awareness of the hoax.

The chart below shows data for the shares associated with the Purdon hoax. Once again, we saw local news outlets speak out to debunk the claim. This time Snopes, the venerable urban legends website that attracts roughly four million uniques per month, joined them. Its debunking was shared the most, unsurprisingly, given the site's reach. The other news sites at play were smaller Texas outlets, and together with Snopes they generated just over 30 percent of the total number of shares seen by the fake article. That is a comparatively low percentage.

However, the two local TV stations (KOCO and KWTX) both saw high share numbers relative to the size of their websites. It's still worth noting that despite the work of five news outlets, total shares for the original false claim still numbered over 47,000 more than those debunking it.

This data suggests that the content of hoaxes plays an important role in how effective any debunkings will be. A geographic element appears to be one element of fake news that inspires news organizations to debunk.

Outlet	Treated the Claim as True	FB Shares	Twitter Shares	Total
National Report	1	73,882	1,256	75,138
Snopes	0	18,117	358	18,475
The Epoch Times	0	1,057	31	1,088
Corsicana Daily Sun	0	0	56	56
koco.com	0	2,506	24	2,530
kwtx.com	0	5,488	16	5,504
		Total shares for fake news	75,138	
		Total shares for debunkings	27,653	

3. Debunking headlines come in many forms.

As previously noted in this paper, headlines are an incredibly important element of any news article. As such, it's useful to examine the types of debunking headlines the press deploys. Below is a list of all the headlines used to debunk the two aforementioned fake news articles, in addition to headlines from debunkings of a Huzlers story claiming earth will experience several days of darkness in 2014.

Banksy Arrested:

- Banksy not arrested: Internet duped by fake report claiming artist's identity revealed (*The Independent*)
- Street Artist BANKSY Arrested? Again? (artFido)
- Hoax "Banksy Arrested in London" Story Dupes the Internet Again (*International Business Times*)
- Calm down everyone, Banksy hasn't been arrested: 9 clues that it's a hoax (*Daily Mirror*)
- Banksy arrest hoax: US website claims street artist caught in Watford (*Daily Telegraph*)
- No, Banksy hasn't been arrested (London24)

- A Bunch Of People Thought Banksy Got Arrested But It Was A Hoax (BuzzFeed)
- Once Again, The Banksy "Arrest" Is A Giant Hoax. Repeat: A Hoax. (The Huffington Post)
- No, Banksy has not been arrested (sigh) (*The Independent*)

Purdon Ebola:

- Texas, Hold 'Em (Snopes)
- Officials: Report That Area Town Is Under Ebola Quarantine Is False (KWTX)
- UPDATE: Internet report of Ebola outbreak in Purdon not true (*Corsicana Daily Sun*)
- Report of quarantined Texas town NOT real; shared on a "fake" news website (KOCO)
- Purdon Ebola Hoax: "Texas Town Quarantined After Family Of Five Test Positive For The Ebola Virus" Report Totally Fake (*The Epoch Times*)

Days of Darkness:

- NASA Blackout Warning (Snopes)
- "NASA Confirms Six Days of Darkness in December": No, they don't —it's a hoax (*The Independent*)
- "NASA Confirms Earth Will Experience 6 Days of Total Darkness in December" Fake News Story Goes Viral (*International Business Times*)
- NASA: Viral news on days of darkness in December is hoax (*Tech Times*)
- #Daysofdarkness: No, There Won't Be Six Days Of Darkness In December (The Huffington Post)

- NASA's "six days of total darkness in December 2014" is a hoax (*Times of India*)
- "6 Days Darkness in December 2014" 100% Fake; NASA Confirmed 3 Days Total Darkness Hoax as Well (*The Epoch Times*)

These debunking headlines fall into three groups:

a. Headlines that use a conversational tone that seem to shake their head at the hoax and those fooled by it.

b. Straight, newsy headlines that mention the existence of a hoax.

c. Headlines that repeat the false claim and then add the declaration that it is a hoax.

We did not observe a particular share trend that correlated with each headline type. However, we would again emphasize that debunking headlines should avoid stating the full hoax claim, as this likely reinforces the information in readers' minds.

It's possible that conversational headlines are more effective for those scanning them quickly on social media. They strike a tone that may be more memorable; they are also geared toward eliciting an emotional response. For example, the headline "Calm down everyone, Banksy hasn't been arrested: 9 clues that it's a hoax" seems engineered to create a sense of relief. Or it potentially aims to align with the reader's disgust at yet another online hoax. In either case, this may help drive reader action. We would encourage additional research about the efficacy of different debunking headlines in order to offer better guidance to newsrooms.

4. There is little institutional memory for fake news sites and their tactics.

Sites such as National Report, The Daily Currant, and Huzlers pump out a steady stream of fake articles, which are often called out by legacy press. And yet somehow they still manage to fool journalists. Newsrooms need to be more aware of the existence of these sites and educate journalists to examine the domain of articles where they are reading.

These sites rely, at least in part, on fooling journalists to help drive traffic and revenue. Denying them oxygen in the form of traffic from credulous news articles is the first step toward stamping them out. The second step is debunking their content when it begins to gain momentum. These sites would not exist if they failed to generate traffic to their pages. Educating journalists about them and then working to debunk their lies will help hasten their demise.

XI. What Works

Claim: Durex is launching a pumpkin spice condom.

Claim Status at Publication: False

Summary: On September 5, 2014 a Colorado web developer named Cosmo Catalano tweeted an image of a pumpkin spice-flavored Durex condom.[188]

He created it in Photoshop to comment about all of the pumpkin spice offerings being rolled out for fall. His tweet initially received a few retweets, but over the ensuing days the image was scraped and reused by many other people on Twitter. It spread enough to capture the attention of a reporter at Quartz. She contacted Durex and its PR firm to ask if the condom was real. The answer she got back was equivocal, she said:

> Several emails to Durex's parent company, Reckitt Benckiser, and Virgo Health, the PR company that handles communications for Durex, didn't yield a conclusive answer. A spokeswoman for Virgo Health said she couldn't say whether the company was or was not actually developing such a thing.

That led to a story about the condom, which ran on September 8 with the original headline, "Durex will neither confirm or deny the pumpkin spice condom."[189] Other websites began to aggregate the story, though not in big numbers. We logged articles from Uproxx, Elite Daily, and PR Newser in the database.

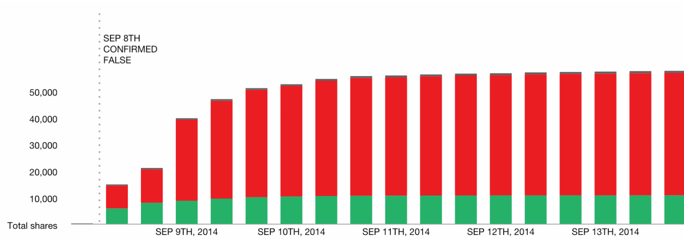
A few hours after the Quartz story, BuzzFeed published an article with a definitive denial from the company: "Durex has heard that people are saying we launched a 'Pumpkin Spice' condom. We can't claim this one, but we do love it when people spice it up in the bedroom."[190] The Durex Twitter account also pushed out that message.[191] At that point, the rumor was debunked.

The pumpkin spice condom was one of the most successfully debunked claims in our research, and therefore offers some clues about strategies for effective debunkings. The first news organization to cover the story also demonstrated a responsible approach to covering unverified social content.

Key Takeaways

1. The claim picked up traction after it was debunked.

The below chart shows the number of shares for articles reporting the claim as false (red) versus those reporting it as true (green). (The gray bars represent articles that repeated the claim about there being a pumpkin-spiced condom.)



Contrary to the sharing trends we identified with other false claims, the pumpkin spice condom story saw the number of shares rise after it was confirmed false. This is because the vast majority of articles published were debunkings. This was also extremely rare.

We quickly identified and logged 16 debunking articles in the database, compared to the original four that reported the claim. (The Quartz and PR Newser authors soon revised their articles to reflect the fact that the condom was not real.)

We did not identify a single news article that wrongly reported this claim as true after it had been confirmed false. (The one story to report the condom as true came from Elite Daily and is the sole source of the green bar above.)

Based on the share trend and the number of debunking articles published versus those that reported the initial rumor, this was the most successfully debunked claim in the research.

2. It offers three clues to effective viral debunkings.

Why did this claim gain traction as a debunking? There are three likely factors.

a. *Speed.* Durex responded within a few hours of the first story being published. The claim had only been reported by four outlets at that point and had not yet gained serious traction. By acting quickly, Durex ensured the might-be-true narrative did not gain significant momentum.

b. *Nature of the discussion prior to debunking.* Anecdotally, the tweets examined in the course of tracking this claim rarely, if ever, declared the condom to be real. The discussion on Twitter was mostly of a joking nature related to the pumpkin spice craze. People were not focused on, or invested in, the element of veracity. They merely viewed the condom as an amusing idea.

c. *Ability to maintain core virality.* An examination of the text and tone of the debunking articles revealed that the articles were still able to take a fun, lighthearted approach to the story. The debunking didn't ruin the joke; Durex's playful response likely aided it.

In the Gawker comment thread about the tension between viral and true, Neetzan Zimmerman cautioned, "You really can't have it both ways when it comes to viral content. If you want to capitalize on its sharing prowess and reap the [page views] that come with that, then you simply can't take a hard-boiled approach to fluff."

Critically, the pumpkin spice condom was still funny, even when called out as fake.

For example, the New York *Daily News* led its article with, "Oh my gourd it was a hoax!"[192]

But the most representative story came from MTV.com. It earned by far the most shares of any debunking claim. This was in part because its debunking also included suggestions for other amusing (and fake) Durex flavors, such as a Pulled Pork Flavored condom.

The fact that the condom wasn't real didn't spoil the joke or the opportunity for writers to capitalize on it in articles.

3. It demonstrated a more responsible approach to viral content.

Quartz was the first news organization to jump on this potentially viral story—but the way it approached the story demonstrated a level of restraint that others might considering emulating in the future.

It would have been easier and faster for Quartz to simply publish a post noting that people are talking about a possible pumpkin spice condom. That would have been a pure "journalism as an act of pointing" approach.

Instead, journalist Heather Timmons decided to reach out to Durex and its PR firm to see if she could answer a key question: Is it real? It was a journalistic approach that didn't prevent her from being first to the story. The fact that Timmons initially received an uncertain response from the PR firm enabled her to write a story that mentioned the possibility of its being real. (Once proven false, the Quartz story was quickly updated.)

This story showed that it's possible to be early to potentially viral content, while still pursuing an element of reporting.

XII. Conclusions and Recommendations

This report began with a quote from Gawker Media founder Nick Denton, after which his organization made subsequent appearances in the text. It's arguably Gawker Media's commitment to transparency that provided ample material for a discussion about reporting on rumors and unverified claims. This was never truer than with the debate between Denton and his staffers over a viral letter that a father allegedly sent to his homophobic daughter.

Fittingly, as I was finishing this report, editor of the flagship Gawker site Max Read made his planning memo for 2015 public.[193] "Already ankle-deep in smarmy bullshit and fake 'viral' garbage, we are now standing at the edge of a gurgling swamp of it," he wrote.[194]

Read said that in the coming year the site would focus on being "a trusted guide to the overwhelming new Internet, your escort through and over the bog of Facebook and Twitter, your calibration tool for the cycle of incident and outrage and parody social-media account. What's actually happening here? Is this story news? Is that photo real?"[195]

Gawker was once a place where you could see much of the viral content taking the Internet by storm. Read isn't shying away from viral hits. He is advocating being smarter about handling and presenting them.

When everyone is looking to the same places and aggregating the same viral claims, there is a clear opportunity to devise a counter strategy. Only so many news organizations can hoover-up anything and everything that has

a potential for clicks. In a landscape characterized by herds of viral editors hunting for content, there is sustenance and success to be found in gathering real evidence to bring forth an angle that is both fresh and factual.

It's what I've come to call anti-viral viral content—information focused on adding value, rather than engaging in mindless propagation. It promotes evidence, questions, and, when appropriate, debunking. It eschews pointing in favor of poking and questioning. As detailed in this paper, there are currently a small number of journalists and news organizations that practice this on a consistent basis. My hope is this will increasingly become the norm.

Rumors and online misinformation are not going away. The human factors that birth and help them spread will forever be a part of our existence. The technology that enables their rapid propagation will only become more widespread and frictionless. We will continue to see unverified claims move online and find an audience.

If the above are fundamental truths of the online information ecosystem, then so too is the fact that journalists will jump on rumors and unverified claims in their early, viral stages. The financial and audience incentives of online news favor this action.

The combination of all these factors results in a massive amount of questionable and downright false information, to which news organizations lend credibility and distribution. False rumors are reported as true, or never updated to reflect the eventual veracity of a claim. At the same time that many news sites are capitalizing on rumors and claims—and pointing to them—there are some journalists who see an opportunity to enact a counter strategy.

News organizations must recognize the value of being smart filters in a world of abundant, dubious, and questionable information. (Or a world of "smarmy bullshit and fake 'viral' garbage," as Read put it.)[196]

Journalism's fundamental value proposition is that it provides information to help people live their lives and understand the world around them. This is impossible to do when we are actively promoting and propagating false information. It's impossible when we do a poor job of communicating the uncertainty and complexity of claims that circulate on networks and elsewhere.

Rumors, in addition to potentially being false, can also be harmful and dangerous. They must be handled with care and restraint. But here is the truth about rumors: When investigated and treated properly, they can have tremendous value as a source of intelligence and ideation. I experienced this personally.

During just a few months of tracking rumors with the Emergent database, I was able to spot patterns and see trends in stories that others missed. This resulted in, for example, a story for Digg that looked at the factors and forces involved in creating the myth of Rehana, the famed female fighter of Kobane.[197] Weeks later, I published a post on the Emergent blog that connected three dubious rumors related to ISIS and female fighters.[198] If we engage with rumors in a way that focuses on examining and verifying them, while also seeking to understand the context and motivations behind their emergence, we move closer to the truth.

That's one of the key takeaways of this research: Journalists are squandering much of the value of rumors and emerging news by moving too quickly and thoughtlessly to propagation. Of course, there are other conclusions to draw from the qualitative and qualitative data collected for this report. Below is a list of the most important, followed by a set of specific and, wherever possible, data-driven recommendations for newsrooms.

Conclusions

- While there has been an increase in dedicated debunking efforts in the press, these are still small compared to the magnitude of the challenge of facing abundant unverified information and the burgeoning hoax economy. Journalists engaged in these efforts too often find themselves tasked with trying to undo the damage caused by others in the news media.

- Debunking efforts in the press are not guided by data and learning drawn from work in the fields of psychology, sociology, and political science. This restricts their effectiveness. An evidence-based, interdisciplinary approach is needed. The below recommendations outline the fundamentals of this approach.

- The business models and analytics programs of many large news websites create an incentive for them to jump on, and point to, unverified claims and suspect viral stories. This approach is receiving some pushback and is by no means universal, but the sites pursuing this strategy are large and drive a significant number of social shares for their content. They have impact that must be matched.

- News organizations that take a more restrained approach to viral content and online rumors are characterized by their absence around these stories. This creates more space for the propagators to take hold in the collective consciousness.

- News organizations introduce confusion and misinformation through the use of declarative headlines on articles about unverified claims.

- News organizations do a poor job of returning to rumors/claims they report on in their unverified stages to close the loop for readers. This is of particular concern when combined with the above finding, as it means false claims are too often portrayed as true and are never updated or corrected.
- The hedging words and attribution formulations news organizations use lack consistency and may in fact have little, if any, effect on reader perceptions of the veracity of information.
- Fake news websites such as National Report and The Daily Currant are polluting the information stream by generating hoax articles that attract significant shares and traffic. News organizations' current efforts to debunk them typically fall short in terms of matching with social sharing. Too often news organizations are fooled by these outlets, thereby helping their work attract more of an audience.

Recommendations for Newsrooms: Handling Rumors and Unverified Claims

Understand your impact.

Whenever a journalist or news organization chooses to write about, tweet, or otherwise touch a rumor, it adds power and distribution to the claim. This happens regardless of hedging language attached to the story, tweet, or social media post. The very act of pointing to a rumor or claim adds a level of credibility. This must be top of mind at all times.

Set a standard.

The first step to better handling rumors and unverified claims is to have a discussion within your newsroom about how you will approach them. Will you post something if it's solely sourced from Reddit? Will you follow-on a

report from another news organization, or will you require your own confirmation? Simply put, your organization needs to determine what it will point to and what it won't. What sources do you need to see? What evidence has to be there?

These are basic questions. They relate to the overall content and editorial strategy of your organization. As such, they should have already been discussed and established. If not, it's time to have that discussion and to share the fruits of it internally so everyone is on the same page.

Evaluate before you propagate.

Here are six questions journalists can ask when evaluating a rumor.

1. **What is the source/evidence?** Who is the original source saying/sharing this, and what do they have to back it up? This is the most essential element. One of the easiest ways to avoid becoming part of a chain of dubious propagation is to take a few minutes and search/read closely to see where the claim or rumor originated. Don't point to a rumor unless you have located the original source and evidence and evaluated it. Journalists who have expertise verifying user-generated content and investigating the origins of viral stories often express shock and dismay at how easily their colleagues miss red flags or don't do a few basic tests on a piece of content. To learn more about how to do that, I suggest the free *Verification Handbook*.[199] (Disclosure: I edited it.)

2. **What is the history?** Who are the people and entities involved in the rumor and its propagation? What does that tell you about its veracity and the players involved?

3. **Who else is saying this?** Are credible outlets or people saying the same thing? Are they questioning it?

4. **What need does it fill?** Rumors fill a need and perform a function. Why might this rumor be emerging now from that place or group of people? Bear in mind that rumors emerge in situations characterized by uncertainty, a lack of consistent information, or as a result of emotions like fear, disgust, and sadness, or hopes and wishes.

5. **What is the motivation?** Consider the motives of the propagator(s). Is this self-interested, altruistic, or malicious propagation? Who benefits from this rumor? Are they involved in its creation or propagation?

6. **How do we add value?** In some cases, you can best add value by waiting and choosing not to give breath to a claim. Take time and see if you can be the person to turn up a key piece of evidence for or against it. If others are already propagating a rumor, the opportunity for capturing pointing traffic diminishes. Take an approach to move the story forward and you're more likely to be rewarded with traffic.

Avoid dissonance.

Do not confuse and mislead readers by treating a rumor one way in the headline and another in the body text. Remember that headlines are powerful vehicles for communicating information, often more so than body text. They are also often what's shared on social media. The headline and body text/content must match, and they must accurately convey your level of uncertainty and skepticism. If you struggle to write a headline that can do this, it may be a sign that the story is not ready to go out.

A final caution: Never insert "Update" in a headline when the body text has changed to reflect the confirmation or debunking of the claim.

Hedge consistently.

Part of the planning process for handling unverified information should include selecting the hedging words your organization will use. If all of your colleagues use the same formulations and words, then dedicated readers are likely to learn your approach, even on an unconscious level. Consistency breeds understanding. Create headline styles for rumors, and offer direction to reporters and producers about the importance of being clear about unverified information as soon as it's mentioned—and throughout all text, video, and other forms of media.

I also advocate developing standard language that can be used in content. For example: "This claim has not been independently verified by [news org] and therefore should be treated with skepticism. We published it because [insert reason]." If you don't feel comfortable explaining why it needs to be reported at any given moment, that's a sign you shouldn't publish.

Plant a flag and update; tie stories together through links/tags, etc.

Many news organizations will point to a rumor in its unverified stage. Then they will not return to it. A better approach is to write an initial story that sets an expectation for the reader that you'll add more information to the story as things evolve. This may sound like a big commitment, but in the course of our research we saw many rumors that were resolved within 24 hours. Asking reporters and producers to own a particular claim and maintain a page is a reasonable request.

If the claim in question looks like it will take days or weeks to clarify, determine if it needs to be propagated at all and if there is a tag or category where all content can be collected.

Promote increments and developments.

News organizations often fail to give story updates and developments a commensurate level of promotion. New evidence and details should be treated as new pieces of content and promoted as such on social media and via other channels.

Remember that if a story involves a situation rife with uncertainty, constant communication is one of the best ways to reduce that uncertainty. This method of information distribution can help quell people's anxieties, which itself can help make them less likely to propagate rumors. Providing verified updates in real-time when you have them is also a way to establish trust and connect with the audience.

Resharing updated articles is also a way to drive traffic and communicate that you are the source for developments on a particular story. This approach is, of course, never more important than when a claim is proven true or false. It should be a standing policy to push out the final outcome through the same channels as you did the initial reporting.

Recommendations for Newsrooms: Debunking

Don't be part of the problem.

It bears repeating that news organizations should not be in the business of spreading misinformation and dubious rumors. News sites that are perceived to be wastelands of unverified information will not be effective debunkers. They will simply not be trusted.

Move quickly.

False information becomes harder to dislodge the longer it goes unchallenged. The more that people see an incorrect headline, image, video, etc., in their social media feeds and emails, the more they are likely to believe it.

The first step is to be more active at flagging unconfirmed information when it begins to spread. Communicate what isn't known and help people understand they need to apply a level of skepticism. When something is verified as false, be fast and aggressive in getting it out.

Don't be negative or dismissive.

As the skeptics interviewed for this paper said, the goal is to debunk an idea or claim, not the person who may be sharing it. Debunkings should not make people feel stupid or attacked. Research has found that "conciliatory rebuttals were more effective than were inflammatory ones," according to DiFonzo and Bordia in *Rumor Psychology*.[200]

Provide a counter narrative.

This is one of the most important debunking strategies. The goal is to replace the existing narrative in a person's mind with new facts. It's more effective than a piecemeal approach to refuting rumors. Humans are attracted to stories, not a recitation of information.

Anthony Pratkanis, a psychologist at the University of California, Santa Cruz, told *The Boston Globe* that a denial alone isn't effective. "The more vivid that replacement is, the better," Pratkanis said.[201] Journalists should use all the storytelling tools available to make a debunking compelling and persuasive. Don't be a spoilsport denier—tell a great story.

Keep it simple.

Journalists are sometimes guilty of overkill. We think that laying out all the facts in detail is an effective way to convince someone that they are misinformed. The reality is that misinformation often takes hold because it is communicated in a simple way, or through powerful phrases (i.e., "rumor bombs"). A debunking must be equally efficient. "A simple myth is more cognitively attractive than an over-complicated correction," according to

The Debunking Handbook. "The solution is to keep your content lean, mean and easy to read."[202] If people have to expend too much processing-power to grasp your point and evidence, they will retreat to what they already know.

Understand the role of emotion and passion in driving shares and traffic.

In a 2012 paper, a group of researchers, including the authors of *The Debunking Handbook*, outlined the role of emotions in helping information propagate: "Stories containing content likely to evoke disgust, fear, or happiness are spread more readily from person to person and more widely through social media than are neutral stories."[203] Rumors and hoaxes often appeal to people's emotions, as well as their existing beliefs and fears. Debunking should therefore also aim to evoke emotion in readers. (But to do so in a genuine, rather than manipulative, way.)

Find the right source(s).

Some of the most powerful purveyors of misinformation are people who passionately believe the claim. False information also spreads when people who have standing in particular communities give it authority and visibility. "Accordingly, the most effective 'misinformers' about vaccines are parents who truly believe that their child has been injured by a vaccine," according to a 2012 paper "Misinformation and Its Correction: Continued Influence and Successful Debiasing."[204]

Another 2012 paper from Brendan Nyhan and Jason Reifler, "Misinformation and Fact-checking: Research Findings from Social Science," outlined the important role sources play in communicating information:

> A vast literature in psychology and political science has shown that statements are frequently more persuasive when they come from sources that are perceived as knowledgeable, trustworthy, or highly

> credible. Conversely, people are less likely to accept information from a source that is perceived as poorly informed, untrustworthy, not sharing the same values, etc.[205]

Journalists need to think about how they can buttress a debunking through sourcing. Whenever possible, find a member of the community in question to voice the correct information. His or her words and presence will help reach the people who are most likely to suffer from the backfire effect.

Express in the positive.

Try to limit association with the incorrect information. The authors of *The Debunking Handbook* offer a diagram of an effective approach for presenting the correct information in a way that minimizes repeating misinformation:[206]

Make it visual.

Visual presentation of information can help people get past biases and instead focus on the information being communicated. "Graphics appear to be an effective means of communicating information, especially about trends that may be the subject of misperceptions (the state of the economy under a given president, the number of casualties in a war, etc.)," wrote Nyhan and Reifler.[207]

Experiment.

The above is a summary of the best current advice regarding debunking, and handling rumors and unverified claims. Some suggestions have years of research to back them up. Others have yet to be tested experimentally, let alone in newsrooms.

This leads to perhaps the most important task for journalists: experiment. Digitally savvy journalists and news organizations must dedicate resources to testing and iterating on different debunking (and rumor reporting) approaches. By testing different story formats, we can collectively gather additional insight into what works.

I hope journalists use this research and guidance to aid them in more accurately judging the rumors they identify and in crafting complementary strategies for their newsrooms.

As Nick Denton said, it's out there. What you do with it has great impact.

XIII. Endnotes

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