



Clara Boothby

January 17th, 2022

## Want to make your research credible online? Image matters

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*Whether it is via videos, blogs, social media, or mainstream news outlets, research findings are communicated in many formats and media other than the traditional research article. However, especially when they are divorced from standard markers of academic quality, what makes these communications credible? Drawing on a study of the perceived credibility of scientific communications, Clara Boothby shows how different platforms are endowed with different degrees of credibility and explores how formal cues and framing effects shape perceptions of research online.*

When online misinformation spreads like wildfire, how can academics ensure that their own research stands out as the most credible? More researchers are using twitter for both **professional networking and outreach**, yet one of the hardest goals for any tweet about scientific research is to present the information accurately and compellingly. However, even accurate information can get buried

and confused with uncredible information, and it's difficult for the truth to compete with sensational clickbait for online attention.

The best way to tell fact from fiction is to already know the truth. Of course, no one knows everything, and readers must often use their judgements based on the surrounding information to rapidly evaluate the credibility of anything they read. Communication researchers often refer to these features as formal cues, and they can include anything from the style or tone of the writing, the website design, the presence of references, and the reputation of the source of the information. Formal cues like these have a powerful effect on the credibility of information, whether or not readers are consciously aware of them.



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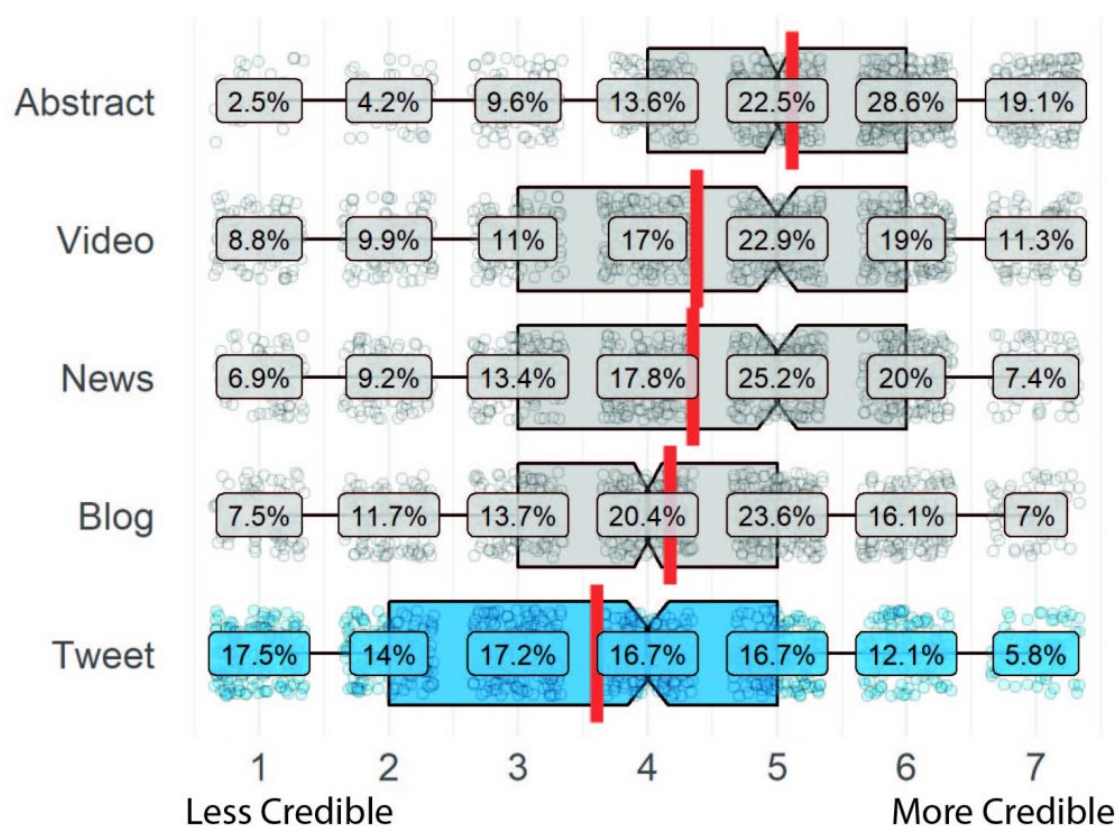
To understand this more, we designed and implemented two surveys where respondents indicated how credible they found scientific information online. While the first survey compared credibility across several media types, including Twitter, the second survey focused more closely on the elements in Tweets that may contribute to higher credibility. This study allowed us to study how information is perceived online, as well as how researchers might shape their messages to stand out from the deluge of information on the web.



## *Screenshots of scientific articles were consistently deemed the most credible by survey respondents*



The power of these formal cues should not be underrated. Our work found how online scientific information can appear more credible by only altering where and how it is presented. The same scientific finding was perceived as more credible if it was housed on a more credible online venue (Fig 1). Screenshots of scientific articles were consistently deemed the most credible by survey respondents, which suggests that original scientific findings are often beginning from a credible position. Other media types, like news articles and blog posts, also tend to be somewhat credible. However, getting media coverage or writing a full blog post can be beyond the reach or time constraints of a busy academic. Twitter, on the other hand, is the platform with the lowest barrier to entry for researchers, making it easy for researchers to share their work. But, we found that information on Twitter was consistently viewed as less credible than the other options.



*Figure 1. Abstracts were rated the most credible by workers on Amazon Mechanical Turk. The same information presented as a tweet, the least.*

Academics are accustomed to demonstrating the strength and validity of their research in a variety of ways: presenting empirical evidence in figures and tables, writing clearly, and backing up findings to established knowledge with references. Furthermore, for published research in a journal, the layout, Journal title, the author credentials and affiliations, all work as formal cues to drive home the message that, yes, these findings have been verified by qualified scientists.

However, tweeting science presents a major obstacle: tweets are short. At only 240 characters a tweet, most of these formal cues are washed away, and instead information must be stripped down to its bare essentials. Then there's the standardised layout that presents credible tweets alongside clickbait, misinformation, memes, and everything else on the internet, with precisely the same design and formatting.

When trying to be credible on Twitter, scientists therefore face an uphill battle to communicate their work. Yet, Twitter is the most widely used social app for scientists. So how can scientists on Twitter make the best of this tool for communicating credible science?

We compared credibility between tweets with different characteristics and found several features associated with high credibility that may help you retain credibility on Twitter. The strongest, most effective action was adding a scientific figure to the tweet (Fig 2). The next most effective was including a screenshot of the scientific abstract. Other features we tested did not appear to affect credibility: Paraphrasing the title doesn't really matter; adding positive adjectives to talk up the paper didn't matter; high engagement numbers of likes and retweets also didn't matter. It seems that you don't have to worry about being witty or popular to be credible on twitter, although it may help to get exposure.

## Abstract



## Figure

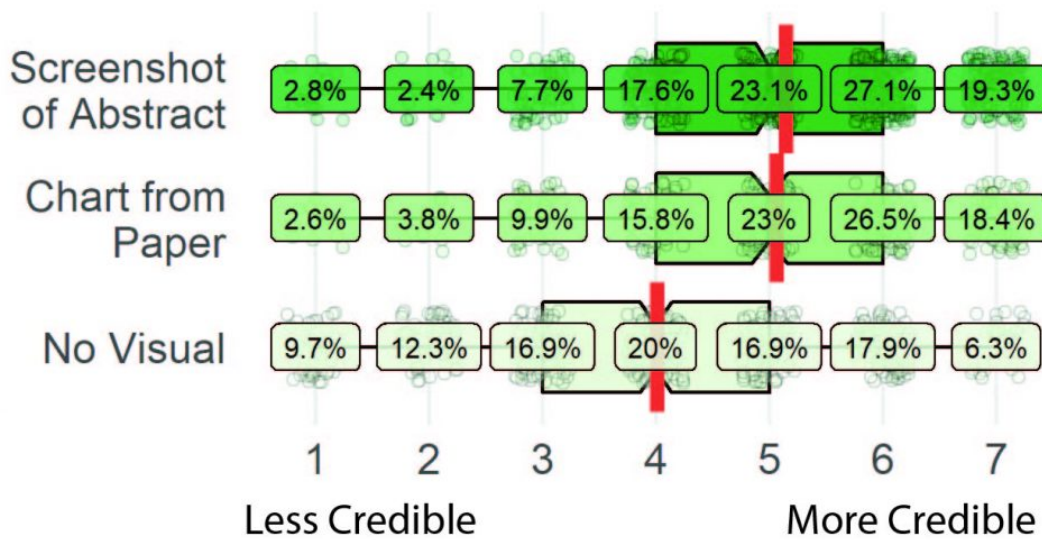
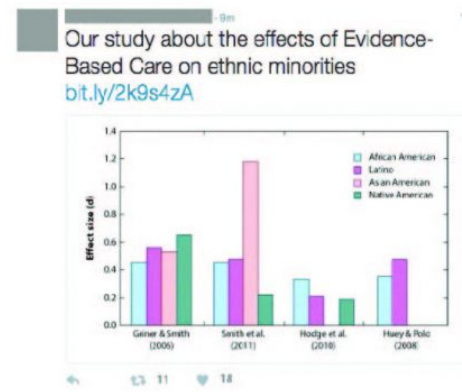


Figure 2. Tweets that included an image from the paper were rated as more credible.

When tweeting about science, attaching a scientific figure or an abstract serves as an easy way to re-introduce some of the formal cues of scientific research. In this way, a researcher could easily recapture some of the credibility that would otherwise be lost in translation to Twitter. However, there is a risk that those pushing misinformation could use this same strategy to make themselves appear more credible; in fact, **pseudoscience mobilizing the trappings of science** to appear more credible has been a particularly troubling menace during the COVID-19 pandemic. While enthusiasm or personal connections to information may not affect credibility, tweets that can merge both credibility and engagement may fare better in the competition for public attention. Unfortunately, misinformation spreaders seem to have **mastered this art**, but in a sense this makes it more important than ever for those with responsible findings to present their work in the best possible way.

Effectively communicating science is about striking a balance between being engaging and presenting research findings clearly and credibly enough to be taken seriously. When you've put so much careful effort into your scientific research, why not put the same care into the tweets where you tell the world about it?

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*This post draws on the author's co-authored paper, [Credibility of scientific information on social media: Variation by platform, genre and presence of formal credibility cues](#), published in *Quantitative Science Studies*.*

*Note: This article gives the views of the author, and not the position of the Impact of Social Science blog, nor of the London School of Economics. Please review our [Comments Policy](#) if you have any concerns on posting a comment below.*

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## About the author



**Clara Boothby**

Clara Boothby is a doctoral student at Indiana University, Bloomington preparing to defend her dissertation in 2022. She studies the interaction between the increasingly team-based structure of scientific research and the career trajectories of scientists embedded within it. She is currently based in the Boston area, but you can find her on Twitter at [@boothbyin21c](#)

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