STS, Data Science, and Fake News: Questions and Challenges

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Abstract Fake news has become the norm in our times. With the coming of social media platforms, where anyone can write/post on any issues without any regulations, sometimes based on what they read from various platforms and sometimes based on what they are asked to believe in by political ideologies, fake news has become a phenomenon that requires serious academic investigation as it has dangerous consequences in society. This chapter attempts to argue for a possible and productive conversation between science and technology studies (STS) and data science to talk about the politics of fake news production. It argues that STS can work as a close ally of data science to bring in questions of power and politics associated with fake news, and its methods can be used in data science to make it more socially relevant.

Keywords STS · Truth · Power · Knowledge · Objectivity

> In addition to describing, representing, or theorizing data science, STS researchers have an opportunity to shape its rollout, whether informing design, doing it, or something else. And since the activities of data science will undoubtedly continue to overflow any technical definition, STS too will be entangled with the rollout of data science and its consequences.—David Ribes[1]

[1]David Ribes [1] "STS, Meet Data Science, Once Again", *Science, Technology, & Human Values* 44 (3), p.535.

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1 Introduction

Fake news has become the norm in our times. With the coming of social media platforms, where anyone can write/post on any issues without any regulations, sometimes based on what they read from various platforms and sometimes based on what they are asked to believe in by political ideologies, fake news has become a phenomenon that requires serious academic investigation as it has dangerous consequences in society. Science and technology studies (STS) can help data science to deal with fake news using its methodological and conceptual tools.

STS as a discipline can play an important role because as an intellectual exercise it was meant to study and critically engage with notions of truth and power, especially the idea of a *singular truth*. STS can help data scientists to go beyond the binary of truth and post-truth and will allow scientists to think about many truths that exist.

Fake news is not free from power. On the one hand, data science enables us to deal with fake news using various methods and techniques, and on the other hand, STS can make sure that data surveillance and data exploitation are not happening by making data science more accountable.

STS as a discipline has always been critical of what is called "objective" scientific data and information, which comes out of laboratories, devoid of politics and power. Precisely because of this reason, STS is also equipped enough to deal with fake news. Before we criticize fake news and the various problems associated with it, we should remember that fake news and scientific information can't be seen as oppositional categories. This is not to say that both are the same. Here I argue, in order to engage with and criticize fake news, we also need to engage and criticize the very idea of singular truth and scientific information. Fake news, like scientific information, is also about power and ideology. This particular position makes STS the most eligible discipline to engage with fake news. Because if we are going to look for "scientific information" as an alternative to fake news, we also have to make sure that we question and challenge the power associated with science and scientific information.

2 Truth, Power, and Knowledge

Though, as argued earlier, as a discipline STS helps us in criticizing truth and power, it is important to argue that STS is also a discipline that challenges fundamentalism of all kinds, be it scientific or religious, scientific reductionism or relativism. As STS scholar Banu Subramaniam very aptly argued, "Given this history, it is not surprising that feminist studies, postcolonial studies, and STS have been at the forefront of not only critiquing the powerful institutions of science and religion and their perversions of truth, but have also been at the forefront of moving us away from the totalizing language of 'objective truth' and 'objectivity.' These are the fields that

understand not only the dangers of truth but also the dangers of RELATIVISM – in both poles, the strictures of power conquer, colonize, and corrupt completely" [2, p. 212]. When science and scientific truth are controlled by scientists and the state, the stakeholders who manufacture fake news come from different parts of the world, and therefore the (mis)information that they create has no accountability, and that makes the situation more complicated. It is called fake news because it is difficult to trace the source of the news/information.

When we think of fake news in that sense, we need to go beyond the binary of fake–real and try to think about the possibility of finding fake in "real news" as well. That is to argue how "the real" science and "scientific information" also have aspects of unreal/non-real, as they are not beyond the control of the state and experts. Very often we see this when we think about the statistics of various events. Often we hear different versions of statistics from different stakeholders, be it of COVID or any other events. How do we make sure that a particular statistics given by a country/stakeholder is correct? Here we can use theories and methods of STS and ask the question: can we really believe the numbers provided by a state or a laboratory? This is where STS plays a role by being part of data science and provokes data science to rethink the binary of fake and real, truth and post-truth, allowing us to look for fake in real news as well, because the very history of science and scientific information has to do with power and domination. Using this formulation, we can study fake news and its source, foundations, politics, and power.

Increasingly, we see that right-wing governments across the world use fake news as a weapon and strategy; they spread news, create news about various issues from politics to knowledge, and present it as "truth," It is important to observe here that the consumers of fake news are not just "villagers" and the "uneducated" but also the educated ones, with technical degrees in engineering and sciences. Of course, one is not saying that the educated ones are already always matured enough to differentiate between fake news and truth. Ideologically and politically driven, they manufacture a truth that is convenient to them and use social media, especially Twitter, to spread that "information" as knowledge. The consumers of this particular truth conveniently do not think about the validity of the news. They just follow what is given to them as "truth."

Here with the help of STS, one can ask the nature of political power and fake news. We need to ask questions about fake news not just from authoritarian and autocratic political regimes. We should also be able to study the production of fake news in democratic regimes. We see that in many democratic countries, the media that criticizes the ruling government gets labelled as "fake news." Fake news here is a tool for the powerful to label the side that opposes them.

3 Truth Versus Post-truth

We very often hear that we live in a post-truth society and that there is nothing called real truth/reality. Though STS as an intellectual exercise helped us in talking about the power and authority of the so-called experts, and the politics of scientific expertise, STS also helps us in understanding how the very construction of numbers and statistics is not free from power, and hence fake news becomes a natural choice for STS scholars to engage with. STS as a discipline, for example, can help data scientists to understand the politics behind the denial of climate change and can be used to understand the larger global network of politicians, capitalists, and other interest groups who construct the narrative and spread the fake news that climate change is not a reality [3].

Data science is a field slowly coming in many universities, including India. It is important that these institutions include STS as part of their training and make STS scholars part of their exercise. With the help of other scientists, STS scholars can make data science more accountable and make fake news a matter of public discussion.

It is difficult to differentiate between fake news and scientific information in our times, as very often fake news is presented as "information" by the powerful regimes. STS scholarship can help data scientists to deal with questions that are not necessarily seen as part of "science": politics of knowledge production. Science and technology studies as a field can help data science to be more democratic, and, more importantly, it is necessary that the data science collective include STS scholars as part of the exercise as they can help methodologically and conceptually in dealing with the politics of fake news production. Therefore, asking questions of power and authority that STS did historically by studying the power of scientists and laboratories can be used in studying fake news as well.

One of the important sites where fake news spreads like a virus is Twitter, and also on many other social media, and WhatsApp. Data science can take the help of STS and anthropology methodologically. Doing an ethnography of fake news on Twitter or WhatsApp will help us understand the nature of fake news and the politics associated with fake news production and consumption. STS scholars had been doing ethnographies of lab and other sites of knowledge production. The same method can be used to study various sites of fake news production. A rich ethnography of fake news by studying Twitter or WhatsApp can inform us the political economy of fake news.

To conclude, as fake news increases, we need innovative ways to deal with it, and that's what data science is promising: to help us identify fake news and its producers. STS can work as a close ally of data science or as part of data science to bring in questions of power and politics associated with fake news, and its methods can be used in data science to make it more socially relevant. Data science clearly can't work like a laboratory science. It needs the public, and STS will help data science practitioners to engage with the public using qualitative methods. Studies demonstrate that data science and STS can have a very productive relationship

[1, 4], and there is no reason to believe that STS will not be a significant ally for data science. With the conceptual tool of STS, we can understand the larger network of fake news, different stakeholders, sites of fake news production, and the politics of these sites. As sociologist and STS scholar David Ribes, who worked extensively with data scientists,[2] argued, "In addition to describing, representing, or theorizing data science, STS researchers have an opportunity to shape its rollout, whether informing design, doing it, or something else. And since the activities of data science will undoubtedly continue to overflow any technical definition, STS too will be entangled with the rollout of data science and its consequences" [1, p. 535]. In future, there will be more conversation between STS and data science. It is inevitable.

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[2]Trained in sociology and STS, Ribes currently works as an Associate Professor at the Department of Human Centered Design & Engineering, University of Washington, USA.