



## Expert Insights into Social Media and Democracy

### An Interview with Philipp Lorenz-Spreen

Publication date: September 23, 2024

*Understanding the impact of the Internet in general – and more precisely social media platforms – on democracy and political behavior has become a central task for interdisciplinary social science research; it is important to policy makers, and in the best interest of all of us.*

*While in the beginning platforms sparked optimistic views on a digital public sphere with new modes of political participation and global connectivity, attention now has shifted to challenges such as hate speech, polarization, computationally augmented propaganda and misinformation, or the rules set by the platform economy. We talked with Philipp Lorenz-Spreen who with colleagues published a systematic review on the topic in “Nature Human Behaviour” that covered a final sample of almost 500 studies.*

*Philipp Lorenz-Spreen is a research scientist at the [Research Center for Adaptive Rationality](#) at the Max Planck Institute for Human Development in Berlin. He received his PhD in Theoretical Physics from TU Berlin in 2018 and was awarded the Junior Scientists Prize of the Leopoldina in 2021. From October 2024 on Philipp will lead the junior research group “Computational Social Science” at the Center Synergy of Systems ([SynoSys](#)) at TU Dresden.*

*The interview was conducted by Leon Fröhling, who met Philipp Lorenz-Spreen during the Conference on Harmful Online Communication ([CHOC2023](#)) on November 14 in Cologne, Germany. The interview has been edited for clarity and length.*

**Keywords:** democracy, social media, public sphere, political trust, platform data, online experiments, platform regulation

**GESIS: Hello Philipp, thank you very much for talking to us about your research and experience in the field of computational social science and platform data. What are you**

**working on at the moment, especially on the interplay of digital media and political democratic processes?**

**Philipp Lorenz-Spreen:** Currently, I am mostly working on the aftermath of a systematic review we recently conducted [1]. Our review aims to get a broad overview of the current scientific understanding of this relationship – how people use digital platforms, how that impacts their political behavior and, subsequently, our democracies. We found many disconnected dimensions. At the moment, I am working on connecting the dots and planning experiments in both online laboratories and the field to get a clear picture of some of the disconnected findings we observed.

**GESIS: How did you first enter this field of expertise? It seems particularly interesting in your case, because you completed your PhD in physics and now you find yourself addressing policy issues.**

**Philipp Lorenz-Spreen:** I had quite a journey. During my master's in physics, I developed an interest in complex systems which is a field within physics and focused on that for my master's thesis. One obvious application of complex systems is networks. From there, the transition to social networks was not a big leap, and during my PhD, I started working on social network data from platforms. The year 2016 – when I started my PhD – was a bit of a wake-up year for much of our research area because Donald Trump was elected, and Brexit happened. People were starting to speculate about the influence of online media on these processes. A bit later Cambridge Analytica caused public scandal, and this also pulled me into the topic. After completing my PhD, I joined the Max Planck Institute for Human Development and continued my journey from physics into the social sciences, a journey I still enjoy.

**GESIS: If you put it like that, it appears to be a very natural development. Since you started working on the interplay of digital media and democracy, were there any major turning points, did something in your understanding change?**

**Philipp Lorenz-Spreen:** There have been several turning points along the way. Some occurred when I discovered a new area of research, with at least two of them being particularly significant. I came from physics and discovered this whole computational social science area during my PhD. This, of course, made me think of new methods. I realized that digital data sources offer much more possibilities than I had thought of before and I moved from modeling towards empirical approaches.

After I started my work at the Max Planck Institute, I learned a lot about experiments and realized that this is a whole new world of how to do behavioral science. Later, during my review on democracy effects, I discovered the field of political science and what this literature has to offer regarding methods of causal inference. These were major points of

changing my thinking and perspective – I profited from that and am still trying to bring all these directions and influences together.

**GESIS:** That seems a perfect connection to the next question: I would like to know more about that systematic review. Could you give us a quick overview of what you did there and highlight some of the results?

**Philipp Lorenz-Spreen:** I was motivated by a lot of policy-related discussions I had in the aftermath of my research on polarization and on the public discourse online. The question on how digital discourse affects our democracy came up in discussions wherever we were: writing a policy brief for the European Union [2], or in a working group on digitalization and democracy in the Leopoldina. During these discussions, we realized how unclear the picture is and that there were different positions from different fields. Some people, to give an example for such differing opinions, were saying that polarization had nothing to do with digital media, while others said social media is clearly driving it. We wanted more clarity, so we did a systematic review.

My colleague Lisa Oswald and I collected more than 3,500 papers with a query and sifted through them until we reached our selection criteria. We still ended up with almost 500 papers. We also recognized that it is a body of literature which has been growing exponentially over the last years. This happened, obviously, because technology, digital media and social media are spreading worldwide and have reached that enormous scale just recently.

Among the most interesting findings was that there are dimensions of our political behavior affected by digital media use that I had not been aware of. One is the trust dimension that seems to be developing in a concerning direction. And the discrepancies between the diversity of news exposure and social network structures – how do these go together? People seem to get diverse news online, but at the same time, they are in these homogenous and concentrated groups of like-minded others. I still want to understand how this works.

*“It is rather unprecedented that a technology is being picked up by a billion people around the globe within a few years, and we still do know so little about the societal impact of that.”*

The global spread of findings was, despite the very strong US-centric focus in the papers incorporated, revealed by some publications from South America and Asia, and also the

very few from Africa. In policy discussions, we use to talk a lot about the US, maybe about Europe; however, these findings showed, that social media is actually happening around the world and that we are still a bit blind for those global developments. It is rather unprecedented that a technology is being picked up by a billion people around the globe within a few years, and we still know so little about the societal impact of that. This was another kind of enlightening moment for me, seeing papers from various countries, sometimes published in niche journals, they often provided valuable evidence.

**GESIS:** By reading studies from these often overlooked countries, were there new things to discover, differences in methodology or distinct patterns that you not had been aware of before?

**Philipp Lorenz-Spreen:** There definitely are patterns, but they are not easy to quantify. In countries where research is not as well-funded as in Europe or the US, researchers often have to rely on survey data, probably because it is cheaper to collect than data from field experiments. There in this respect is a pattern of funding. However, surprisingly complex methods are sometimes being used in countries that I did not have on my radar.

About the results: there are some positive findings in the emerging democracies. This could be a reflection of the actual situation, or it could be due to a delayed adoption of technology or the research thereof. Social media had initially been seen as a mere democratization of information also in our countries; later, we came to realize the enormous power of platforms and that not everything works towards democracy, fairness, and liberation.

*“We also need to better understand how autocratic regimes use state-controlled social platforms to maintain their power.”*

Lastly, I observed that there are studies from autocratic countries like Russia and China, which reveal that conducting social media research in these countries is not easy. The names of places or politically active people are sometimes mentioned only vaguely, because the authors fear potential conflicts with the regime. We also need to better understand how autocratic regimes use state-controlled social platforms to maintain their power. Social control is another big blind spot in our research.

**GESIS:** You also looked at study quality and study biases. How did you approach that question? Given the heterogeneity of the studies, was it possible to carve out any indicators for high study quality that sort of universally worked?

**Philipp Lorenz-Spreen:** That was very difficult, and we did not see a clear pattern; but if there was a pattern at all, it would be that more negative outcomes were a bit more prominent in the highly powered studies. These studies observed the behavior of millions or thousands of people, rather than recruiting participants like a survey. However, the heterogeneity of the methods was too high to properly quantify a risk of bias.

It really depends on the type of research you are doing. For experiments, the experimental set up and careful crafting of the paradigm – how comparable are the conditions in a randomized control trial – indicate how well designed a study is. For survey studies, the sampling criteria and the representativeness of the sample are much more important.

**GESIS:** The review also deals with differentiating between correlational and causal evidence. Do you have recommendations on how to establish causal evidence in CSS studies?

**Philipp Lorenz-Spreen:** We only had a small subset – 22 out of 500 studies – that tried to establish causal evidence through a variation of methods. Some researchers conducted field experiments by actively placing people into different conditions. Others performed natural experiments where, by coincidence, a part of the population did not have access to social media for some time or similar situations occurred. Additionally, there were inference approaches that utilized temporal or local variations in the data. You must be lucky to find some coincidence in the data that allows for a well-argued causal inference, and it is always about interpretation.

*“Social media not only is an interesting object of study, it also offers methodological innovation for behavioral research. We conduct online experiments where we can have varying control over the setup versus more ecological validity.”*

**GESIS:** Apart from the review – what does your own methodological toolbox for studying the interplay between digital media and democracy look like?

**Philipp Lorenz-Spreen:** That is becoming an increasingly diverse set of methods. Social media not only is an interesting object of study, it also offers methodological innovation

for behavioral research. We conduct online experiments where we can have varying control over the setup versus more ecological validity. For instance, we can either show participants hypothetical content and then have them rate its trustworthiness under different conditions; or we can use actual content that people see or interact with on social media.

Currently, I am developing a browser add-on to scrape people's feeds and experimentally manipulate aspects of those feeds. I am also working on field experiments where we recruit participants on the social media platforms, incentivize them to change aspects of their online environment and observe their subsequent behavior. For even greater ecological validity, we just observe real online behavior and combine these data with survey data to obtain more detailed demographic and political information about the participants. This spans the spectrum from tightly controlled experimental data to descriptive observational data of actual online behavior.

*“What is more, our research, for good reasons, is guided by higher ethical standards than those of the industry.”*

Since a big part of our daily lives now happens online, we can make this more measurable and observable. Big companies have understood this for the last 20 years and have made substantial profits with a powerful economy behind them. However, I believe this also offers new possibilities for research in a more ecologically valid way. What is more, our research, for good reasons, needs to be guided by higher ethical standards than those of the industry.

**GESIS: You are working on interventions for combatting misinformation and manipulation online. Could you expand a bit on this?**

**Philipp Lorenz-Spreen:** One path is to better understand how social platforms operate and what their effects on our political behavior are. You could also ask how a social platform *should* be designed to serve society or democracy [3]. I could not make any definitive recommendations at this stage; ultimately, these decisions are political.

*“The ‘choice architecture’ online is complex, opaque, and data-driven.”*

Our aim is to gather evidence on what works and in which direction it works. Broadly, interventions can be categorized into two types: you can improve people’s competencies in navigating the online environment, teach them to how verify a website’s trustworthiness or how to identify conflicts of interest in online posts. The other approach is to improve the environment itself, because the current online environments are not well tuned for us to find the best information or engage in the most constructive conversations. Their designs need to be changed for us to improve our choices in the long run; in psychology, this is described as the choice architecture. The “choice architecture” online is complex, opaque, and data-driven.

An improved choice architecture could enhance the transparency of algorithmic behavior and give people more power to configure the algorithms according to their own individual preferences. These two can go hand in hand, they need to be further explored, and their effectiveness must be evaluated to arrive at informed recommendations.

**GESIS:** This suggests that researchers play a role in boosting the abilities of social media users and creating transparency and accountability of platforms. How can researchers proactively influence online environments? You mentioned that you were writing policy briefs for the European Union.

**Philipp Lorenz-Spreen:** The first step always is research and demonstrating that a certain approach works: we first have to create evidence. To have policy makers reading those papers then takes effort – it does not happen that research kind of magically turns into regulation. Active engagement is required, and to me writing policy briefs and working with think tanks is very valuable; this includes learning about the demands from the policy side. The research can be conducted with regard to basic questions like understanding mechanisms, ascertaining people’s reactions to additional transparency or different algorithms and many other things.

*“However, it needs delicate balancing to avoid becoming too political, and researchers are often finding it challenging to navigate this.”*

Simultaneously, you understand more about the policy measures needed to improve the situation. However, it needs delicate balancing to avoid becoming *too* political, and researchers are often finding it challenging to navigate this. Climate scientists may be in a similar way treading on a fine line. They try to produce evidence to understand why our climate is changing and how to prevent it, but dealing with climate change remains a political decision.

**GESIS:** Could you recommend any additional resources for those who want to better understand the topics we discussed in this interview?

**Philipp Lorenz-Spreen:** Our systematic review [4] is a good resource and includes also publication on methods, which is not that easy in our rather novel field. Good guides and tools are being put out, for example by GESIS. I have a website for my project containing most of our papers where I also added some other resources, and this could be another resource to turn to [5].

**GESIS:** Great, thank you! With our last question we invite you to dream big: if you could make a wish to the universe for something like a research artefact, a package, an app, a theory or a resource – what would that be?

**Philipp Lorenz-Spreen:** My dream would be to have an open-source research platform that functions like a social media platform, where numerous research teams can collaborate. Imagine, thousands, or even hundreds of thousands, of active users engaging with it as a social platform – but for research purposes!

This could be a big collaborative project where we can observe collective behavior at a scale. That is not achievable in a controlled experiment where we can only have 100 to 1,000 participants. Having a really big research platform that facilitates communication among people *and* computational social science research would be great – though I am not sure how feasible it is.

**GESIS:** That is a wonderful dream, though.

**Philipp Lorenz-Spreen:** That is what I am trying to achieve.

**GESIS:** Thank you, Philipp, for sharing, and thank you for this interview!



## References

- 1 Lorenz-Spreen, P., Oswald, L., Lewandowsky, S., & Hertwig, R. (2023). A systematic review of worldwide causal and correlational evidence on digital media and democracy. *Nature Human Behaviour*, 7(1), 74–101. <https://doi.org/10.1038/s41562-022-01460-1>
- 2 European Commission, Joint Research Centre, Lewandowsky, S., Smillie, L., Garcia, D. (2020). Technology and democracy: understanding the influence of online technologies on political behaviour and decision-making, Publications Office. <https://data.europa.eu/doi/10.2760/709177>
- 3 Lorenz-Spreen, P., Lewandowsky, S., Sunstein, C. R., & Hertwig, R. (2020). How behavioural sciences can promote truth, autonomy and democratic discourse online. *Nature Human Behaviour*, 4(11), 1102–1109. <https://doi.org/10.1038/s41562-020-0889-7>
- 4 See ref. 1.
- 5 <https://reclaimingautonomyonline.notion.site/Reclaiming-individual-autonomy-and-democratic-discourse-online-bed7c964bc8740898d68b9a4f7c71ee3>

All links in the text and the reference list were retrieved on August 8, 2024.

### Suggested citation

Lorenz-Spreen, Ph. (2024). *Expert Insights into Social Media and Democracy. An Interview with Philipp Lorenz-Spreen*. (GESIS Guides to Digital Behavioral Data, 20). Cologne: GESIS – Leibniz Institute for the Social Sciences.

### Series editors

Danica Radovanović, Maria Zens, Johannes Breuer, Katrin Weller, Claudia Wagner

### Publisher



**GESIS** Leibniz Institute  
for the Social Sciences

### License

Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)