Exploring online conversations around science – data practices of informal online knowing spaces

Science and science communication are considered crucial to respond to global crises such as climate change or pandemics. At the same time, debates about the role of online communication in the dissemination of scientific knowledge are fueled by concerns about populist political movements, increased commercialization, and the spread of misinformation.

As public conversations around science move into digital contexts, new actors and mechanisms are shaping the way people talk about science in online "knowing spaces". While some discussions focus on the risks of dis- and misinformation, others emphasize the encouraging opportunities for professional science communication and for direct exchanges between scientists and members of the public. But both perspectives risk missing important actors and practices: In online spaces, complex sociotechnical systems mediate engagement with science. They involve informal and collective interactions between technical features, social norms, and overlapping communities.

This thesis explores the science communication practices in informal science-oriented online spaces in the context of global crises. The websites of climate movements and discussions of the pandemic on Reddit serve as examples of non-professional actors and practices that recontextualize science communication online. Drawing on Science and Technology Studies, science communication research, and internet research, this dissertation addresses the following research question: In science-oriented online contexts relating to global crises, what traces are visible of 'behind-the-scenes actants' shaping conversations about science?

In paper 1, I examined the use of hyperlinks on the websites of two climate movements, Fridays for Future (FFF) and Extinction Rebellion (XR). This paper contributes to a conversation about activists as alternative science communicators. Although both movements emphasize ties to academic science and amplify existing science communication, I saw differences in the sources they refer to and the contexts they reassemble them into.

Paper 2 investigates the data practices (i.e., the social use of technical affordances) in three coronavirus-related subcommunities on the social media platform Reddit. The builds on the concept of data practices, showing that data practices differ not only between platforms but also between communities on the same platform.

Paper 3 continues the investigation of coronavirus-related information on Reddit. In this paper, I focused on the role of moderators, the tools they use, and the relationships they maintain with user communities and platform management. I followed three major controversies related to content moderation in the wake of the pandemic. This paper expands on the notion of platform dialectics to distinguish between interactions within communities and interactions across the platform at large, and how they shape coronavirus-related discussions.

My thesis calls for attention to context in science communication. I show how actors informally take on roles as science communicators, and how seemingly similar communities informally engaging with science can develop different collective practices and interactions. While professional science communication efforts still play an influential role in these knowing spaces, the communities mediate and recontextualize them in different ways.

For both practitioners and researchers in science communication, informal recontextualization deserves attention. My thesis shows that work inspired by Science and Technology Studies and internet research can provide the tools to identify and characterize different online contexts, thus contributing to a more nuanced understanding of online conversations around science.