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Public Understanding of Science
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DOI: 10.1177/09636625251343507
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Tensions in the public communication by scientists and scientific institutions: Sources, dimensions, and ways forward

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Abstract

Tensions between scientific organizations' conceptions and demands regarding public communication on the one hand and the public communication of individual scientists on the other hand exist and may even become more prevalent. Such tensions revolve around issues of institutional reputation management and academic freedom, centralized messaging and individual autonomy, or scientific neutrality and political engagement, and can be catalyzed by changes in media landscapes and sociocultural contexts surrounding scientific institutions. This essay identifies sources and key dimensions of these tensions. It also explores how institutions manage such tensions and how scientists respond, ranging from loyalty to institutional policies to open dissent, self-censorship, and exit. To mitigate conflicts, it advocates for inclusive and transparent communication policies that balance institutional goals with scientific autonomy, fostering trust and ensuring that both organizations and researchers contribute effectively to public discourse.

Keywords

interaction experts/publics, science communication

1. Introduction

On 13 March 2021, all members of the University of Bern—one of Switzerland's largest institutions of higher education—received an email. In it, university leadership announced new social media guidelines. Staff and faculty were instructed, among other things, not to endanger public

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trust in the university, to clearly distinguish personal opinions from facts and to discuss complex scientific questions in scientific publications and conferences instead of social media. And, the university added, because professors "are generally perceived as members of the university [when they] express themselves on social media, the interests of the university must also be taken into account in any such activity" (University of Bern, 2021). A controversial debate broke loose within the university, but also in news and social media, with researchers lamenting organizational censorship and infringement of academic freedom (Ammann, 2021; Reinhard and Fend, 2021).

This is not an isolated incident. Universities and research institutions in countries like Germany, Italy, the United Kingdom, or the United States have repeatedly tried to steer or even curtail the public communication of individual scientists, sometimes using general policies prescribing the topics, forms and expected behaviors for scientists' exchanges with journalists or for social media communication, sometimes blocking communication or events on topics like the COVID-19 pandemic, gender concepts in biology or more recently, the situation in Gaza.

We think that these cases stand for a larger pattern. They exemplify existing and likely rising tensions between scientific organizations and their institutional conceptions and demands regarding external communication on the one hand, and the communication efforts by individual scientists on the other hand (cf. Väliverronen and Saikkonen, 2021; Weingart, 2022: 293f.). While such both efforts often go hand in hand, they can be conflictual—and we try to identify sources and key dimensions of these tensions, and formulate an agenda for future research.

2. Organizational and individual rationales of public communication: Sources of tensions

Generally, tensions between organizational rationales and the individual communication of scientists have to be understood in the context of larger and well-documented societal developments.

First, and most generally, this is the rising importance of science communication: crucial in contemporary "knowledge societies" (Stehr, 1994) where scientific findings are highly relevant for dealing with questions and challenges on an individual, organizational and societal level (Bucchi and Trench, 2021). Second, broader higher education reforms, often associated with "new public management" approaches (Altrichter, 2015), have strengthened organizational leadership in higher education and increased universities' ability to act strategically (Fürst et al., 2022). In turn, third, societal expectations toward science and scientific institutions have changed: decision-makers, stakeholders and citizens expect science and its institutions to legitimize themselves more and to demonstrate societal relevance and impact (Bornmann, 2013; De Jong et al., 2015)—and they are more willing to criticize science, its representatives and institutions if they perceive them to not meet these demands (Mede and Schäfer 2020; Schmid and Betsch, 2019). Fourth, communicative ecosystems have changed dramatically in the past 25 years, with the erosion of established news media (Dunwoody, 2021; Schäfer, 2017) and the rise of digital and social media, which gave individual scientists and scientific institutions low-threshold opportunities to communicate to non-expert audiences directly and bypassing established gatekeepers like journalists (Neuberger et al., 2023).

Embedded in this context, the *organizational communication* of higher education institutions (HEIs) and research institutions has undergone significant transformations (Entradas, 2022; Schäfer and Fähnrich, 2020). These changes are driven by both external societal demands and internal strategic objectives.

One major factor shaping organizational science communication is the increasing expectation that universities and research institutions demonstrate their societal "impact" beyond research and

teaching. Public communication has become a recognized "third mission" (Autzen and Weitkamp, 2019), and part of a broader "promotional culture" (Väliverronen et al., 2022). In addition, competition among universities has intensified, leading institutions to strategically position themselves through external communication (Fürst et al., 2023). As a result, organizational science communication has expanded, professionalized, and diversified. Universities now devote more resources to communication efforts, establish dedicated communication teams, and develop structured communication and outreach strategies (Elken et al., 2018; Ferris and Waldron, 2021; Fürst et al., 2023; Schwetje et al., 2020). And these strategies often take organizational interests into account: institutional leadership increasingly views communication as a tool for building reputation, shaping public perceptions, and strengthening an organizational brand (Belanger et al., 2014; Gan, 2020; Vogler, 2020). In some cases, this has led to a push toward more centralized, uniform messaging—what Väliverronen et al. (2022) call "the idea of one institution–one voice."

However, achieving a singular institutional voice is challenging. Universities and research institutions are inherently heterogeneous, "polyvocal" (Väliverronen et al., 2022) or "plurivocal" (Volk et al., 2024), composed of diverse academic communities with differing perspectives and priorities. Despite the growing influence of organizational leadership, these organizations remain complex entities where individual researchers have significant autonomy, making communication efforts difficult to assess or even control.

While science communication is increasingly shaped by institutional strategies, *individual researchers* also play an active role in engaging with the public. They are often incentivized to do so by their organizations—through policies, symbolic recognition, and support mechanisms like media training (Baram-Tsabari and Lewenstein, 2017)—and sometimes also by external factors, such as expectations of research funders or future employers, journalists asking individual scientists directly for statements about complex and sometimes controversial issues and so on (cf. Peters, 2013).

However, individual scientists are not merely representatives of their institutions. They often navigate multiple professional identities: they are members of universities, researchers in specific disciplines, leaders of scientific associations, advisors in policy panels, and even citizens engaging in public discourse. As a result, organizational incentives are just one influence among many shaping individual scientists' communication choices. Scholars have noted that both individual characteristics—such as personal attitudes toward engagement—and broader organizational and institutional contexts—such as disciplinary norms and national research cultures—affect scientists' communication behavior (Besley, 2014; Entradas and Bauer, 2019; Perkmann et al., 2013; Rauchfleisch et al., 2021).

Moreover, many researchers engage in public communication for strategic reasons (Kessler et al., 2022). They may seek to enhance their professional visibility, strengthen their reputation within their academic communities, or increase their citation impact through media exposure (Fahy and Lewenstein, 2021). The rise of digital and social media has further expanded these opportunities, allowing scientists to reach diverse audiences, build networks, and engage directly with stakeholders (König, 2020; Van Noorden, 2014; Yeo and Brossard, 2017).

However, individual communication efforts do not always align with institutional objectives. In some cases, tensions arise when scientists prioritize personal or disciplinary interests over organizational messaging. These misalignments can range from minor discrepancies to outright conflicts (Weingart, 2022). In addition, external actors—such as journalists—may amplify these tensions. Reporters often bypass university communication offices to directly contact researchers, selecting those who are media-savvy or who can provide compelling, less generic and sometimes more pointed statements. Institutional and journalistic priorities may also diverge regarding who serves as a suitable spokesperson: while universities might prefer individuals who are topically competent

and institutionally loyal, journalists may prioritize accessibility, charisma, and media responsiveness.

Ultimately, the motivations driving individual science communication are varied, shaped by institutional expectations, disciplinary cultures, career ambitions, and personal interests (Kessler et al., 2022). While universities and research institutions seek to coordinate communication efforts for strategic purposes, the autonomy and diverse incentives of individual researchers ensure that science communication remains a dynamic and sometimes contested space in which tensions between individual and organizational aims can arise.

3. Lines of tension and their consequences

Tensions between scientific organizations and individual scientists regarding public communication manifest differently and can be grouped into ideal-type categories. They arise from differing configurations of priorities, interests, and expectations related to institutional reputation, individual autonomy, disciplinary boundaries, and the evolving media landscape.

Reputation management versus academic freedom

Incentivized by the changes outlined above, scientific organizations tend to prioritize their institutional reputation and seek to maintain a unified, carefully managed public image (Gan, 2020; Väliverronen and Saikkonen, 2021). Individual scientists, however, emphasize academic freedom, including the ability to communicate research findings, opinions, and criticisms openly, according to academic criteria and without organizational interference. This can create tensions when institutions perceive certain public statements by individuals as reputational risks for the organization. Universities and research institutions may fear that controversial statements by affiliated scientists will damage their credibility, affect funding relationships, or alienate stakeholders (Weingart, 2022). On the other hand, scientists may not understand or even resist restrictions, arguing that open debate, including controversial views, is essential for academic integrity and scientific progress.

Institutional loyalty versus individual autonomy

Organizations often strive for cohesive communication— the abovementioned a "one institution— one voice" model (Väliverronen et al., 2022). However, universities and research institutions are inherently pluralistic, comprising diverse academic disciplines, viewpoints, and research agendas (Volk et al., 2024). Institutional leadership may impose guidelines to ensure consistent messaging, especially on politically sensitive topics, while individual researchers may reject organizationally imposed communication strategies, viewing them as restrictive or misaligned with their expertise or even as irrelevant because they do not perceive themselves as organizational representatives. During the COVID-19 pandemic, some universities sought to control expert commentary to maintain consistency, while scientists expressed concerns about institutional overreach in shaping public narratives.

Scientific neutrality versus political engagement

Scientific organizations often position themselves as politically neutral entities, avoiding overt political stances to maintain broad credibility (Väliverronen and Saikkonen, 2021). However, many scientists feel a responsibility to engage in political or activist discourse, particularly on urgent societal issues such as climate change, public health, or human rights (Dablander et al.,

2024). Universities may worry that public political engagement by faculty members could be perceived as partisan, leading to institutional backlash or funding risks—a situation highly pronounced currently in the United States. At the same time, many scientists argue that their expertise obliges them to advocate for evidence-based policy and social change. A relevant example is the case of climate scientist Rose Abramoff, whose activism led her institution to distance itself from her public engagement (Quackenbush, 2022).

Mediated versus unmediated communication

Tensions can also arise when institutions attempt to control scientists' direct interactions with journalists and specific publics. Universities often prefer that media requests go through official channels, whereas journalists and scientists frequently bypass institutional communication offices (Peters, 2013). Some organizations even require researchers to obtain approval before speaking to the press, aiming to avoid misrepresentation or controversy (Vogler, 2020). However, scientists may prefer to communicate directly with the public or media, believing that institutional mediation can dilute or distort their message. In turn, journalists often seek out media-savvy scientists for expert commentary, bypassing institutional communication offices, which may lead to internal conflicts over public representation (Neuberger et al., 2023).

Individual visibility versus internal competition

Public engagement can create friction within academic institutions, as media visibility may disproportionately benefit certain individuals or scientific fields (Rauchfleisch et al., 2021). The "Matthew Effect" (Bucchi, 2015; Merton, 1968), further reinforced by contemporary communication dynamics, suggests that high-profile scientists may dominate media representation, overshadowing others in their field, leading to perceptions of unfair advantages in career advancement or funding. Some academics may view colleagues' media presence as overstepping disciplinary boundaries or misrepresenting expertise. The backlash against Italian immunologist Antonella Viola (who had become familiar to media audiences during the Covid-19 pandemic) by colleagues in food science over her popular books and talks on diet and alcohol consumption illustrates intra-disciplinary tensions fueled by media visibility.

Strategic communication versus research popularization

Organizations sometimes attempt to shape or delay public dissemination of research findings to align with strategic interests, fundraising priorities, or political considerations (Balmer, 2004; Gusterson, 2003). Institutional leadership may encourage scientists to emphasize certain aspects of research that align with institutional branding or societal impact metrics (Autzen and Weitkamp, 2019). Scientists, however, may push back against perceived interference, viewing it as an infringement on academic integrity. Concerns about institutions pressuring researchers to highlight positive outcomes or delay controversial findings have been documented in fields like biotechnology and climate science (Väliverronen, 2021).

Expert advice versus legal and ethical accountability

Public communication can have legal and ethical consequences, particularly when scientists act as institutional representatives or policy advisors (Ammann, 2021). Scientists providing expert commentary in official capacities may face legal liability for inaccurate or misleading statements, while

institutions expect faculty to exercise caution in public statements to avoid potential misinformation or liability (Bucchi et al., 2022). The L'Aquila earthquake trial, in which scientists were held legally accountable for providing reassurances before a deadly earthquake, illustrates—among other things—the high stakes of public scientific communication (Brandmayr, 2020). Similarly, physicist and Nobel laureate Patrick Blackett advised that scientists serving as policy advisors should not merely present scientific facts but also offer actionable guidance to decision makers (Weingart, 2001).

4. The way forward and open (research) questions

We do not suggest that the abovementioned tensions are omnipresent, or that relations between organization and individual scientists are always and inherently conflictual when it comes to public communication. We do suggest that such tensions arise regularly, however, and increasingly so, and that analyzing their origins and consequences is paramount to understand contemporary science communication.

In doing so, it is important to recognize the diversity of institutional and organizational contexts in which communicative tensions arise. While universities, particularly in certain countries, have traditionally allowed relevant degrees of communicative freedom to their academics, the situation may be different in the case of research organizations affiliated with political bodies or industry partners where, sometimes, formal restrictions to individual scientists' public communication have been in place for decades. The described tensions may also be particularly pronounced in crises that require quick decisions and communicative responses even though data and findings are insufficient (Brossard et al., 2019; Brüggemann et al., 2020), as evidenced during the COVID-19 pandemic (especially in the early stages) or the Fukushima incident (RSA, 2016; Vaughan, 2015). They shape the current contexts of science communication and potentially public perceptions of science, scientists, and science organizations.

Attempts by scientific organizations and HEIs to deal with tensions between their communication activities, aims and identities, and communication activities by individual scientists vary considerably. Organizations can try to "rebalance" individual communication that they consider embarrassing through more articulate and intense communication on the same and related topics. They can also "nudge" scientists toward more prudent and coordinated communication through instructions (as in the cited case from the University of Bern), training courses, or by offering professional communicative support. More extreme responses include negative sanctions or even pushing scientists to leave their jobs, even though documented cases are rare: in 2009, however, Nature reported the case of "a prominent New Zealand climate scientist" who had been fired by a government-funded research institute, allegedly for talking to the media without authorization (Pincock, 2009).

Individual scientists' responses to such tensions can range considerably as well, and might be conceptualized using Hirschman's (1970) seminal conceptualization of the relation of consumers to corporate organizations, who described three options for individuals facing such tensions that apply here as well (cf. Dehkharghani et al. 2023; Ghani and Malik, 2022):

1. *Loyalty*, meaning that, in the cases described here, individual scientists can remain publicly loyal to their institution, and suppress or limit their dissent to internal, "backstage" situations (Väliverronen and Saikkonen, 2021). These cases may obviously go often unreported or unnoticed by the public.
2. *Voice*, meaning that scientists openly criticize institutional responses or communicative activities or their organizations, as in the cited case from Switzerland (e.g. Ammann, 2021; Weingart, 2022).

3. *Exit*, meaning that scientists leave or resign from the institution, or that they become more cautious and self-censor when they are aware of and concerned about the risk of potential communicative controversies.

Given these complexities, a rigid, one-size-fits-all approach to alleviate the described tensions is neither feasible nor desirable. Instead, universities and research institutions should develop communication policies that acknowledge the plurality of voices within their academic communities while also providing guidance on how to navigate potential conflicts (Väliverronen, et al., 2022; Volk et al., 2024). Such policies should differentiate between institutional communication—where a unified message is necessary for official representation—and individual scholarly engagement, where diversity of thought and open debate should be protected. Institutions should also establish transparent and inclusive governance mechanisms that allow scientists to have a say in shaping communication policies. Rather than imposing top-down restrictions, universities should foster open discussions between leadership, communication offices, and researchers to ensure mutual understanding and alignment of goals (Entradas, 2022; Vogler, 2020). Institutions could create advisory boards or working groups composed of researchers from different disciplines to provide input on communication strategies and address emerging tensions proactively.

From the perspective of individual scientists, engaging constructively with their institutions is key. Scientists should be mindful of institutional considerations while asserting their right to academic freedom. Proactively participating in internal discussions about communication policies, seeking clarification on institutional expectations, and using available institutional resources—such as media training and public engagement offices—can help align personal and institutional interests. In addition, researchers should be encouraged to differentiate their personal opinions from institutional positions explicitly–for example by including disclaimers in public communication– in order to ensure that audiences understand the distinction.

Ultimately, fostering a culture of trust and mutual understanding between institutions and individual scientists is crucial. While universities and research institutions have legitimate interests in managing their public image, they must also recognize that scientific credibility is rooted in openness, debate, and the free exchange of ideas. Both parties should view communication as a shared responsibility rather than a battleground of competing interests. The challenge moving forward will be to strike a balance that preserves both institutional integrity and the communicative autonomy of scientists, ensuring that science remains a vital and trusted voice in public discourse.

Generally, and importantly, more research is needed to explore these tensions' prevalence as well as their characteristics, dimensions, development and potential solutions. It is surprising how few studies exist on such cases—a scarcity of research that, we assume, can be explained not by a lack of these cases, but instead by scholars not focusing on them enough or by practitioners being too cautious to talk about them openly. Remedying that would be important and would help the research and practice of science communication considerably.

Acknowledgements

The authors would like to thank Eliana Fattorini, the two anonymous reviewers and the editor for their helpful comments and suggestions.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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