

Title: Why should we think about social justice in science communication?

Abstract

What is science communication for? We argue that science communication can be framed, reimagined and transformed in service of social justice, which is what the papers in this special issue examine. We understand the vocabulary of “social justice” to signal the centring of critical research and practice paradigms, an ethical commitment to righting wrongs, building equity for all human beings and the broader ideal of improving the world (Fraser, 2003; Sen, 2009; Young, 1990). We argue that bringing critical social justice lenses to science communication can usefully interrogate, rethink and ultimately reshape our field. This special issue examines both critical perspectives on science communication and what equitable transformations might entail.

Main text (2886)

What is science communication for? This seemingly simple question (often answered in a solipsistic way with ‘to communicate science’) when taken seriously compels us to think quite differently about how, where, with whom and why science communication activities take place. Indeed, at the heart of this special issue is the old sociological question about what work certain things *do* in the world - in this case, those ‘things’ are the many and varied politics, practices and research projects that sit under the broad umbrella of science communication. Amidst what some might read as critiques of science communication, we argue, as the canny reader will guess from the title of this special issue, that science communication can be framed, reimagined and transformed in service of social justice, which is what the papers that follow examine. Indeed, examining the normative politics that undergird science communication is crucial if we hope to use its language, tools, concepts and/or practices for different normative purposes, that is, social justice.

We understand the vocabulary of “social justice” to signal the centring of critical research and practice paradigms, an ethical commitment to righting wrongs, building equity for all human beings and the broader ideal of improving the world (Fraser, 2003; Sen, 2009; Young, 1990). We argue that bringing critical social justice lenses to science communication can do (at least) two useful things for the field. First, it can help us see more clearly how power plays out in science communication and the often invisible or tacit ways in which so many people, practices and knowledges are excluded from science and knowledge production or are allowed only to participate in very particular and constrained ways (Dawson, 2019; Roberson & Orthia, 2021; Wilmot, Iqani, & Madondo, 2023). Second, it can help us to reimagine those ideas about who counts, what ideas count and which practices count in ways that are more meaningfully inclusive (Finlay et al., 2021; Iqani, 2023b; Rasekoala, 2019; Roberson & Orthia, 2023). By centring questions of power, inequalities and the contemporary politics of social movements in our work (including but not limited to anti-racism, decolonial approaches, crip activism, queer politics, fourth wave feminism) we can usefully reframe science communication through the various lenses of social justice. This reframing is not only theoretically and practically generative, but critical for the relevance and utility of the field as a whole.

We argue that most science communication (research, policy and practice) remains closely tied into the scientific and policy defined epistemological framings of the late 20th

Century in the Global North (Dawson, Hughes, Lock, & Wahome, 2022; Lock, 2011). As such, colonial frameworks, heteronormative perspectives and scientific tendencies – to mention just three forms of structural inequality – too often travel with science communication (Finlay et al., 2021; Lock & Armstrong, 2023; Rasekoala, 2023). What, for instance, could science communication entail if it did not set up colonial, patriarchal, racist and/or homophobic modes of relation?

Historically across our field, little attention has been paid to alternative renderings of science communication. Today, however, we find ourselves at a time when practitioners and researchers around the world are doing, thinking and writing differently, foregrounding social justice in their science communication work (although, we should note, many have been doing this all along, it has just been harder to read about their work, not least as a result of anglophone publishing practices in academia). These alternatives to what Finlay et al. (2021, pp. 1) call “mainstream” science communication might include paying attention to the everyday realities of science and society relationships; non-dominant publics; perspectives from the Global South; affective relations with science and science communication; the flows of structural power, patterns of oppression and their impact in science communication; and science’s roles in justifying how marginalised groups, their knowledges and practices are conceptualised and positioned in relation to itself (see for instance, Hikuroa, Slade, & Gravley, 2011; Iqani, 2023a; Noble, 2013; Race, 2015; Whitmore, 2013). In this special issue we ask what opportunities are afforded if we work in ways that do not contribute to entrenched patterns of oppression, but instead support a broader range of people to understand, question and contribute to science in our societies?

One key question that arises in relation to social justice in science communication has to do with the global politics of knowledge. The world has been shaped by violent legacies of colonialism, which as well as decimating peoples and cultures, also forged specific hierarchies of scientific knowledge, framing western paradigms as superior, and African, Asian, Arab, and Indigenous science as inferior. Therefore, the project of science communication for social justice should explicitly seek routes towards what Violet Milton and Winston Mano (2022, p. 272) call, “epistemological conviviality”, that is, broadening the canvas of theoretical framings to welcome in knowledges that were injured or ignored by Western science. The more we welcome new empirical data and theoretical insights embedded in non-Western settings into the journals and academic conversations that are hosted and controlled by the Western academy, the more inclusive the project of science communication can become.

With contributions from around the world and across a range of social justice topics, this collection of papers represents a significant shift in how science communication is understood and enacted. Notably, thinking with political philosopher Lois McNay (2022), it is crucial that we reflect on how social justice and science communication combine differently in different contexts and perspectives. People, and the socio-political histories they live with, change in small and larger ways from one day to the next, as well as across communities, and the local, national and regional levels, yet power-geometries also linger, shaping structural inequalities across time and space. As a result, seemingly similar science communication practices, languages and concepts can play out very differently, depending, for instance, on histories of settler colonialism, national or international geo-politics, or the overlaps between socio-cultural identities and structural inequalities (Massey, 1994; Ngũgĩ, 1986; Warner, 2005).

There is no one size fits all model, although many have been offered (calls for 'engagement' or 'dialogue' spring to mind). The papers in this special issue, each located in their specific context, mobilise different critical perspectives to examine social justice themes within science communication. We invite readers to reflect with each paper on how these issues, ideas and practices might apply in their context, what they would change, add or remove, and what they might learn from.

Martha Maradino and Maria Paula Meneses (2024) bring an 'Epistemologies of the South' critical lens to the *Peoples and Plants* exhibition at the Museum of Natural History and Science, Portugal. Their research paper via detailed content analyses and interviews with visitors, details the multiple ways in which colonial violences and local knowledges can be silenced and erased within the natural history museum setting. They argue in favour of practices that do not automatically adopt the monocultural approaches, knowledges, and narratives of western science in interpreting artefacts and histories of the global south. The paper therefore raises important questions for practices of communication and display within the wider museum sector to encourage approaches rooted in social justice and decolonialism.

An alternative framing of science-society relationships, rooted in the mid-century and post-Indian independence concept of "scientific temper", is outlined in the essay from Siddharth Kankaria and Anwasha Chakraborty (2024). By de-centring our established concepts and theories of science communication models, publics and practices away from the Global North, the essay proposes an alternative critical perspective which positions citizens as active interrogators and critical participants in a less binarised ecosystem of science-society interactions. Crucially, the essay encourages us to interrogate our own institutional practices to ensure that we do not reproduce systemic issues in science, including "hegemonic ivory towers, power dynamics and information asymmetries".

Chase Ledin's (2024) theoretical paper takes an in-depth approach to thinking about gender, sexuality, sex, knowledge and queer theory in science communication, in relation to social justice. He argues that moving beyond identitarian politics offers people working in science communication a useful way to rethink 'inclusion'. Crucially, his work points to one way that science communication might be productively queered, that is, to reconsider the normative politics of science communication from the perspective of often-invisibilised queer publics.

Drawing on empirical data from the US, in their paper Evelyn Valdez-Ward and her colleagues (2024) discuss their analysis of surveys from a science communication training scheme. The Reclaiming STEM workshops served scientists from marginalised identities, who benefited from training that made structural inequalities explicit. Their testimonies are emotional, distressing and insightful. The paper reminds us that leaving injustices unexamined does not mean they go away. Instead, as Valdez-Ward et al. (2024) highlight in their work, making justice concerns explicit is valuable for science communication training and speaks to why many scientists from marginalised groups embark on science communication in the first place.

Marie McEntee, Mark Harvey, Fabien Medvecky (2024) offer a new paradigm for thinking about science communication from the south, in this case Aotearoa New Zealand. Considering the challenges of communicating the science of forest biosecurity and plant pathogens, the authors recalibrate a theoretical framework for the problem by drawing on

Indigenous knowledge systems. They show how, while Western epistemic systems rank and assign credibility hierarchically, the mātauranga Māori knowledge ecology forges more inclusive forms of understanding, engagement and activism. The researchers treat mātauranga Māori knowledge as equivalent to Western paradigms, which is revolutionary considering how colonial legacies elevated the latter at the expense of the former. Arguably, the project of science communication for social justice will require similar projects of elevating Indigenous knowledge systems to their rightful place, alongside those already accepted as valid in the field, from many other global south locations.

The experiences of a global science communication project funded by the European Commission are the topic of reflection in the paper by Joseph Roche and colleagues (2024). The legacies of colonialism are apparent in the economics of the global research funding system, with countries in the north typically bestowing grants to researchers in the south, or to study issues that matter to the south, or to set up projects that invite participation from researchers in the south. The paper offers some revealing reflections on that politics, and how ideas about the right and wrong way to do science communication are produced by the political-economy of funding, usually coming from the north, with researchers and practitioners in the south framed as recipients of those models. It also raises the question of what social justice means if and when its aims become codified in the lexicon (and resource control) of funding bodies.

Of course, there are myriad issues and critical perspectives rooted in a commitment to social justice to bring to bear on this emergent facet of science communication practice and research. Those offered here work through different aspects of themes that we feel should be more central to the discipline, including (but not limited to) inclusion/exclusion, relationships between hegemonic, marginalised and silenced knowledges and Global South/North politics. What, for instance, does it mean to be “included” in science communication, if we don’t attend to the structural forms of power that shape these spaces, practices and knowledges? What has to be left out, in order to gain admittance to these hallowed halls? Turning to geopolitics, it is crucial we attend to the politics of funding, how it is controlled, disseminated and valued. Not least, as many of the papers in this special issue demonstrate, because colonial legacies continue to shape the knowledge project. What does it take to put knowledge from the Global South on a par with knowledge from the Global North?

Finally, we want to reflect on the deep joy we felt working together as editors, working with all of the contributing authors and with the journal team in putting together this special issue. We especially want to thank the JCOM editors for seeing the value in this corpus of work, which has, in our experience and as attested to elsewhere, not always been recognised as relevant to the whole of the science communication discipline, but relegated to the sidelines as a niche issue (Chatterjee, 2023; Finlay et al., 2021; Menezes, Murray-Johnson, Smith, Trautmann, & Azizi, 2022; Orthia, 2020; Rasekoala & Orthia, 2020). In this special issue we are delighted to celebrate the work of our insightful authors, many of whom are early-career researchers, which leads us to hope that the discipline is changing shape. We hope readers will similarly feel challenged, yet hopeful about the opportunities these different perspectives bring to our field.

Author biographies

Emily Dawson (she/her) is Professor of Education, Science and Society at University College London. Her research and teaching examine how science communication, education and engagement (i.e. from schools, to museums, to watching TV at home) set some people up to feel comfortable, while other people feel profoundly excluded. She tries to figure out how that happens, with a view to reimagining what meaningfully equitable & transformative practices might involve.

Mehita Iqani (she/her) was appointed Chairholder to the DSI-NRF South African Research Chair in Science Communication, hosted at Stellenbosch University in January 2022. In this role, she is leading ~~on~~ a research programme with the theme, “science communication for social justice”, which focusses on critical and action research ~~into~~ investigating the role that communication can play in connecting science with social advancement, in the domains of health, environment and equity. Prior to taking up the Chairholder position, she was a Professor in Media Studies at the University of the Witwatersrand, where she taught, researched and collaborated for almost eleven years. She is the author and editor of several books on media, consumer culture, luxury, waste, and the global south.

Simon J Lock (he/they) is an Associate Professor in Science Communication and Governance in the Department of Science and Technology Studies at UCL. They are currently co-director of qUCL, UCL’s research centre and network on gender and sexual diversity. Their research and teaching is focused on the nascent field of Queer STS, which aims to unpick the heteronormative, gendered, racialised and ableist architectures within and around cultures of science and knowledge production. More broadly they focus on science in public cultures, with a particular focus on inclusion, equity and power in science communication, community engagement and policy practices.

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