JCOM

Response to: "Looking back to launch forward: a self-reflexive approach to decolonising science education and communication in Africa". Decoloniality opens up new epistemic vistas for science communication

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Abstract

Decolonial perspectives open up epistemic and practical insights for science communication. Following critiques of a deficit-model framing of the field, science communication has been redefined as an inclusive cultural space of meaning-making around science. From a decolonial lens, however, a cultural perspective necessitates a fundamental reckoning with the historical and contemporary politics of knowledge claims, including the erasure and devaluation of entire knowledge-systems in the process of Westernization. In recognizing and learning from these histories, science communication can learn from parallel developments within the sciences. It can also learn from contributions made by decolonial scholars to the global challenge of navigating sustainable futures. This piece briefly discusses one such example, drawing from scholarship on the ontological cosmovision of Ubuntu and its relevance to climate change dilemmas today.

Keywords

Representations of science and technology; Science communication: theory and models; Social inclusion

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Introduction: culture as a solution to discontents with the deficit model?

As we move from a deficit-model framing of the field, science communication faces two interrelated epistemic challenges. The first is defined by the compelling need to rethink and reconstruct the object around which the field has evolved, i.e., science. If science communication is no longer understood primarily as the dissemination of scientific facts, what knowledge claims do we produce and publicize? The second challenge is defined by the practical task of contributing to transformative changes in infrastructures and systems of living called for by planetary crises. If science is no longer always centre-stage, how then can science

communication justify public and policy action for sustainable futures? For example, without climate science as the fulcrum, how can we navigate the terrain of climate communication for climate action?

Outlining a paradigm for decolonising science communication in Africa, the article by Temilade Sesan and Ayodele Ibiyemi [2023] provides an important entry point to help us recognize, clarify and respond to the twin challenges posed here. In this Commentary, I'll build on insights from their article while drawing also on a raft of contributions being made by Indigenous and non-Indigenous scholars to rethinking science — and the place of science in policymaking and public action — from a decolonial perspective.

Science communication researchers have typically appealed to culture [e.g., Weder, 2022] as a way around the epistemic and practical challenges of engaging publics around sustainability matters. Going down this route, we would be well advised to leave the content of science alone and focus on artful ways of engaging publics around shared problems of (un)sustainability. In this context, science communication teems with many novel approaches to creating "emotional connections between scientists and publics" [Joubert, Davis & Metcalfe, 2019] and stimulating conversations to problematize the taken-for-granted in everyday life [Weder, 2022]. More broadly, Davies, Halpern, Horst, Kirby and Lewenstein [2019] articulate a view of science communication today as fundamentally cultural in nature. By this they mean science communication is best understood as a set of processes of collective meaning-making.

Valuable as these conceptual and communicative devices are, they still leave us with a conundrum. What happens to conventional epistemic questions previously delegated to science? How do we engage with knowledge claims about the problems we're meant to address or indeed, how do we articulate our own claims?

Inclusive science communication and its limits from a decolonial lens

Scholars grappling with the limits of science-first models of public communication usually appeal to the plurality of relevant knowledge claims as a way of continuing to engage with knowledge. Redefining science communication as the social conversation around science, Bucchi and Trench [2021] underline processes of interpreting and reconstructing knowledge in participatory science communication where multiple forms of knowledge are possible. Likewise, Raman and Pearce [2020] argue that cosmopolitan approaches to knowledge are more suited to public engagement around climate change today. In other words, in science communication we now aim to be inclusive in our approach to knowledge claims.

Yet, as Sesan and Ibiyemi [2023] observe, inclusion is at risk of becoming a performative, box-ticking exercise which fails to acknowledge the history and politics of how entire knowledge-systems became erased or disqualified from a seat at the table. For this reason, Liboiron [2021] is at pains to emphasise that aspirations for equity or inclusion are far from sufficient to decolonize geoscience. The field of geoscience was built on relations that enabled the collection of samples from the colonies and therefore the science itself needs to change in anti-colonial directions. Similarly, Trisos, Auerbach and Katti [2021] outline the ingredients for decolonizing the ecological sciences, arguing that the "perils of entrenched thinking have never been clearer" as we grapple with ecosystem degradation.

When efforts are made to include or integrate indigenous knowledge into Western science, as is increasingly common in sustainability initiatives in settler-colonial countries, they may nonetheless perpetuate colonial logics of extraction [Latulippe & Klenk, 2020]. Knowledge co-production may be seen as a method to collect and integrate data points from Indigenous peoples, when in fact how Indigenous scientists approach and inhabit the world — including the process of inquiry — is inseparable from the outputs [Whyte, Brewer & Johnson, 2015]. As Leach [2022] points out, there is a perennial danger of co-created or co-produced initiatives ending up with a separation of what gets called 'knowledge' (derived from science or perhaps newer modes of transdisciplinary research) from 'heritage' [Liboiron, 2021] or 'culture' (things that might be central to Indigenous knowledge-systems but treated as epiphenomenal by non-Indigenous researchers).

Returning to the cultural model then [Davies et al., 2019], the challenge for science communication is finding the languages and practices where knowledge is neither a matter of science alone nor the domain of 'mere' culture (understood as separate from the world of facts). Metcalfe's [2022] definition of participatory science communication as a process in which scientists "do not necessarily drive the participative process" may go some way towards recognizing these challenges, but we still have a long way to go. As Liboiron puts it, writing from the standpoint of a scholar in the settler-colonial state of Canada, "adding more Indigenous texts to a syllabus neither impacts land relations nor changes the dominant knowledge paradigm" [Liboiron, 2021].

For Sesan and Ibiyemi [2023], decolonizing science education and science communication in Africa opens up a critical opportunity to return knowledge to its roots in functionality. In pre-colonial times, knowledge was created and disseminated through the everyday activities of living. They suggest that this return to the nexus of knowledge and function could be invaluable for offering solutions to climate change and other major sustainability challenges that are appropriate to Southern contexts. Nor does this approach have to mean a simple return to the past or a rejection of innovation. The past is already embedded in the present as scholars of coloniality remind us. But also, as Olaopa and Ayodele [2021] point out, the integration of African knowledge-systems into African-led sustainable development initiatives demands a significant measure of ingenuity and creativity. Innovation does not come to an end just by the act of learning from pre-colonial ways of knowing, quite the contrary.

Cosmovisions for collective action

Other decolonial scholars offer food for thought for how we might motivate sustainable action in the absence of Western science as the sole bedrock of epistemic and practical justification. Naicker [2011] observes that despite countries coming together for decades to respond to global environmental change, a discourse of collective responsibility has been poorly articulated. The Southern African Nguni concept of Ubuntu offers a possible cosmovision to ground this collective responsibility, she argues, a point that Okoliko [2018] develops further with reference to debates around the role of climate science in relation to climate policy negotiations.

The global climate change regime does consist of a principle of 'common and differentiated responsibilities' between the early industrializers and low-income countries. However, the interpretation and practical translation of this normative idea of climate justice has remained subject to the dynamics of North-South geopolitics [Okereke & Coventry, 2016]. In any case, the very motivation for a climate regime has long rested on climate science and the work of the Intergovernmental Panel on Climate Change (IPCC). The IPCC has been enormously influential, but translating climate science into meaningful action remains a challenge [Hollin & Pearce, 2015; Singh & Singh, 2023]. For this we need to learn from different ways of knowing, valuing, and inhabiting the world and bring these into the conversation. Ubuntu offers one such way.

Famously popularized by Archbishop Desmond Tutu, the idea of Ubuntu is grounded in the fact that we are part of a web of relations: a person is a person only through these relationships. Importantly, Okoliko [2018] spells out the nature of Ubuntu as an ontological concept as well as an ethical one — the two are inseparable. Relationality is, quite simply, a fact. Furthermore, Okoliko argues that the web of relationality includes non-human beings — one might say, the Earth itself — as well as other humans. This perspective is "at home with uncertainty and does not perceive its removal as a precondition for being eco-responsible" [Okoliko, 2018, p. 90]. In other words, we do not need to wait for more science in order to be moved to act. Within the predictive paradigm, science is a precondition for climate action but there is nothing in science itself to motivate cooperation or to be moved by the interdependence of actions from the Industrial past, the organization of modern lives today and the experiences of peoples hit by floods or fire.

It has been suggested that the cosmovision of Ubuntu is simultaneously alive to the demands of fusing theoretical knowledge and practical experience [Naicker, 2011]. Inevitably this means attending to how people experience and engage with climate change in particular contexts [Hollin & Pearce, 2015]. Meaning-making is critical, as Davies et al. [2019] underline in their cultural model of science communication, but from a decolonial perspective, the dominance and marginalization of particular meanings matters.

In conclusion, I want to underline that in this piece, I have only managed to scratch the surface of a topic that demands much more sustained engagement in future work in our field. Decolonial and Southern epistemologies and cosmovisions offer us new ways of thinking beyond conventional boundaries in science communication. Those of us trained in Western knowledge-systems, myself included, have much to gain from engaging with scholarship beyond our familiar confines as we seek to investigate the epistemic and practical challenges that lie beyond the passing of the deficit model. We also have a responsibility to do this work in ways that are collaborative and non-extractive.

Even the IPCC [2022] in its Sixth Assessment Report has acknowledged the impacts of colonialism on the disproportionate distribution of present-day vulnerabilities to climate change. Elsewhere, some leaders of organized science have begun to acknowledge that science has sometimes lost public trust due to "researchers' own painful missteps and blatant violations of that trust" [Parikh, 2021]. These examples suggest that the science system is open to learning from its mistakes and to doing better science as a result. Science communication's history may be

different, but we too have a responsibility to interrogate how coloniality shapes the types of knowledge we value and promote. In many ways, this piece arises from my ignorance as from any knowledge I can claim. But perhaps as we gesture towards inclusive science communication, it is no bad thing to start by acknowledging what we don't know but need to bring into our collective processes of meaning-making.

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