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EDITORIAL

Editorial for the special issue on emotions in science communication

Luisa Massarani, Neta Shaby and Daniel Silva Luna

Abstract

While substantial research has focused on emotions within classroom activities such as class attendance, studying, and test-taking, less attention has been paid to emotional experience in informal science settings such as media, museums, and public science events. Despite their significant role, emotions are under-theorised and under-researched in science communication. However, there is a growing interest among researchers and practitioners in understanding their role in the public communication of science and leveraging these insights for more effective science communication. This context lead us to propose and organise this Special Issue on Emotions in Science Communication, comprising six manuscripts as detailed in this editorial.

Keywords

Public understanding of science and technology; Informal learning; Public engagement with science and technology

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Emotions are woven into every aspect of science communication. They colour the spark of curiosity [Davies, 2019], the awe at discovery [Silva Luna & Bering, 2022], the anxiety of risk [Tateno & Yokoyama, 2013], the anger at injustice [Dawson et al., 2022], and the hope of collective problem-solving and other emotions related to specific topics such as climate change [Hayhoe, 2022; Oliveira et al., 2025] and vaccines [Oliveira et al., 2023a]. They shape whether trust in science is extended or withheld [Drummond & Fischhoff, 2020], how scientists are perceived [Zahry & Besley, 2021], and whether people feel motivated to engage with or retreat from science and science communication activities [O'Neill & Nicholson-Cole, 2009; S. Rowe et al., 2022]. They also infuse science communication practices across settings, from museums [Massarani et al., 2023] to social media platforms [Oliveira et al., 2023b]. To ignore the affective is to miss a basic truth about how humans engage with knowledge: we do not simply process facts, we feel them. Research consistently shows that emotions matter — sometimes subtly, sometimes starkly — for learning, trust, decision-making, and the tenor of public debate [Davies et al., 2019]. The implication is clear: any fuller understanding of science communication must place emotions at its centre.

In the broad domain of social sciences, the so-called "affective turn" has reinforced this recognition, drawing attention to the felt, embodied, and relational dimensions of life [Gregg & Seigworth, 2020]. What unites much of this scholarship is the claim that emotions are central to human experience and cannot be bracketed out of analysis [Ahmed, 2004]. Beyond this agreement, however, definitions diverge. Psychologists often describe emotions as discrete or appraised responses [Moors et al., 2013; Tracy & Randles, 2011], neuroscientists as patterns of construction in the brain [Barrett, 2017], while sociologists and anthropologists emphasise their circulation in culture, their role in practices, and their place in social order [Lutz, 1988]. On what emotions are, no consensus exists and likely never will [Izard, 2010]. On their importance, by contrast, there is broad and enduring agreement [Gregg & Seigworth, 2020].

This lack of definitional closure is not a weakness but a reflection of the richness and complexity of emotions themselves. It also highlights their ubiquity; emotions permeate all domains of life, from fleeting humour in everyday exchanges to collective anxieties about global crises. Such breadth demands generosity not only in methods and theories, but also in the topics considered worthy of attention. For science communication, the task is not to impose order on this plurality but to recognise that, however defined, emotions are indispensable to how people encounter, interpret, and respond to science [Davies et al., 2019].

Recognising this does not mean privileging one theory or one method. On the contrary, studying emotions in science communication calls for methodological, theoretical, and thematic openness [Taddicken & Reif, 2020]. The contributions to this special issue, which showcases six articles, illustrate precisely this diversity. They demonstrate that emotions can be approached as constitutive of knowledge, as rhetorical and strategic resources, and as lived, embodied experiences.

First, emotions shape the production and circulation of knowledge. This is evident in contributions that examine contexts of crisis and risk. C. Rowe et al. [2025] show how risk communicators in New Zealand balance fear and fascination to encourage earthquake preparedness, highlighting how emotional appeals can both mobilise and paralyse. Chordaki and Zarifi [2025] turn the lens inward, exploring how emotions circulated among Greek experts during the COVID-19 pandemic. Their analysis traces how silences, hesitations, and

affective tensions became entangled with institutional authority, illustrating that emotion is not peripheral to expertise but constitutive of it.

Second, emotions operate as rhetorical and strategic resources. In the expanding landscape of digital and mediated communication, affect is mobilised to persuade and connect. Vivas Peraza [2025] analyses crowdfunding videos through the lens of Aristotelian *pathos*, finding that scientists often foreground positive appeals — friendship, kindness, trust — rather than fear or pity. Jonas and Taddicken [2025] examine affective cues in voice-based AI, showing that empathy and humour alter how people evaluate the trustworthiness of communicative AI. These studies illustrate that persuasion in contemporary science communication increasingly hinges not only on what is said, but on how it feels.

Third, emotions are lived and embodied experiences. Two contributions draw attention to the sensorial, performative, and collaborative production of affect. Montenegro et al. [2025] reflect on theatre as a medium for communicating bipolar disorder, showing how artistic practice can both draw on and generate strong audience emotions. Marques and Carlin [2025] analyse observational astronomy sessions, tracing how awe, wonder, and even disappointment are co-produced in real time as people look to the sky. These studies remind us that emotions are not abstractions but shared practices, enacted through voice, gesture, performance, and encounter.

Taken together, these six articles reveal the multiplicity of ways in which emotions infuse science communication. What unites them is not a single theory or definition but a shared recognition that affect is central to how science is lived, communicated, and contested. Their contributions are partial and exploratory rather than definitive, and precisely in this lies their value: they invite further debate and highlight the need for methodological, theoretical, and thematic diversity.

Such openness is important because emotions are not merely objects of measurement or coding, but dimensions of how people experience and interpret the world [Silva Luna & Bering, 2020]. Attending to them means recognising vulnerability, difference, and the ways science is felt in relation to backgrounds and circumstances. Science communication unfolds in a technoscientific world marked by both promise and precarity. People live with science not as detached observers but as feeling subjects, whose identities, hopes, and anxieties are bound up with scientific knowledge and its products [Davies, 2024]. To make emotions central in our scholarship is therefore not only a methodological choice but also an ethical commitment: to see audiences, practitioners, and scientists alike as embodied beings whose affective lives matter [Ahmed, 2004; Wray, 2021].

This special issue takes up that commitment. Across their variety, the six contributions illustrate what such an orientation can look like in practice: whether by tracing how fear, silence, and uncertainty contour communication in times of crisis; by analysing the affective cues through which scientists and technologies seek to build trust; or by showing how awe, empathy, and other emotions emerge in theatre, astronomy, and everyday encounters. These studies differ in theories, methods, and contexts, but they share a concern with treating emotions as central to the practice and experience of science communication. Our aim in bringing them together is not to impose closure, but to open space for further conversation. We hope this issue will serve as both a reference point and an invitation, encouraging new voices, perspectives, and methods to engage with the affective dimensions of science communication in the years to come.

References

Ahmed, S. (2004). *The cultural politics of emotion*. Routledge.

Barrett, L. F. (2017). *How emotions are made: the secret life of the brain*. Pan Macmillan.

Chordaki, E., & Zarifi, M. (2025). Feeling uncertainty: power, knowledge and emotions in times of crisis. *JCOM*, *24*, A05. https://doi.org/10.22323/157420251002190134

Davies, S. R. (2024). *Science societies: resources for life in a technoscientific world*. Bristol University Press.

Davies, S. R. (2019). Science communication as emotion work: negotiating curiosity and wonder at a science festival. *Science as Culture*, *28*, 538–561. https://doi.org/10.1080/09505431.2019.1597035

Davies, S. R., Halpern, M., Horst, M., Kirby, D., & Lewenstein, B. (2019). Science stories as culture: experience, identity, narrative and emotion in public communication of science. *JCOM*, *18*, A01. https://doi.org/10.22323/2.18050201

Dawson, E., Hughes, S., Lock, S. J., & Wahome, M. (2022). Exploring the politics of science communication research: looking at science communication from a social justice perspective. *JCOM*, *21*, C05. https://doi.org/10.22323/2.21070305

Drummond, C., & Fischhoff, B. (2020). Emotion and judgments of scientific research. *Public Understanding of Science*, *29*, 319–334. https://doi.org/10.1177/0963662520906797

Gregg, M., & Seigworth, G. J. (Eds.). (2020). *The affect theory reader*. Duke University Press.

Hayhoe, K. (2022). *Saving us: a climate scientist's case for hope and healing in a divided world*. Simon; Schuster.

Izard, C. E. (2010). The many meanings/aspects of emotion: definitions, functions, activation and regulation. *Emotion Review*, *2*, 363–370. https://doi.org/10.1177/1754073910374661

Jonas, E., & Taddicken, M. (2025). Empathic, humorous and trustworthy? A mixed-methods study on real-time evaluations of voice-based AI communicating science-related information. *JCOM*, *24*, A04. https://doi.org/10.22323/157620250923164028

Lutz, C. A. (1988). *Unnatural emotions: everyday sentiments on a Micronesian atoll and their challenge to western theory*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226219783.001.0001

Marques, J. B. V., & Carlin, A. P. (2025). Wonder and disappointment observing the sky: how emotions shape astronomy communication interactions. *JCOM*, *24*, A03. https://doi.org/10.22323/154020250918221515

Massarani, L., Scalfi, G., Neves, R., Dahmouche, M. S., & Bento, L. (2023). Family visits to a biodiversity exhibit: an analysis of emotional responses during free visits and visits mediated by explainers. *Cultures of Science*, *6*, 214–234. https://doi.org/10.1177/20966083231183255

Montenegro, M., Carballo, S., & Moreira, F. (2025). Theatre and bipolar disorder: dealing with emotions. *JCOM*, *24*, N01. https://doi.org/10.22323/157520250929164851

Moors, A., Ellsworth, P. C., Scherer, K. R., & Frijda, N. H. (2013). Appraisal theories of emotion: state of the art and future development. *Emotion Review*, *5*, 119–124. https://doi.org/10.1177/1754073912468165

Oliveira, G. F. d., Massarani, L., Oliveira, T., Scalfi, G., & Alves-dos-Santos-Junior, M. (2023a). The COVID-19 vaccine on Facebook: a study of emotions expressed by the Brazilian public. *Comunicar*, *31*. https://doi.org/10.3916/c76-2023-10

Oliveira, G. F. d., Massarani, L., Oliveira, T., Scalfi, G., & Alves-dos-Santos-Junior, M. (2023b). The COVID-19 vaccine on TikTok: a study of emotional expression in the Brazilian contexto. *Evolutionary Studies in Imaginative Culture*, *7.2*, 28–45. https://doi.org/10.56801/esic.v7.i2.3

Oliveira, G. F. d., Massarani, L., Scalfi, G., Santos Junior, M. A. d., & Oliveira, T. (2025). Emoções e mudanças climáticas no Instagram: um estudo em contexto brasileiro. *Texto Livre*, *18*. https://doi.org/10.1590/1983-3652.2025.58661

O'Neill, S., & Nicholson-Cole, S. (2009). "Fear won't do it": promoting positive engagement with climate change through visual and iconic representations. *Science Communication*, *30*, 355–379. https://doi.org/10.1177/1075547008329201

Rowe, C., Orchiston, C., & Medvecky, F. (2025). Walking the faultline of fear: how affect-inducing risk communication can help promote disaster preparedness. *JCOM*, *24*, A02. https://doi.org/10.22323/1487202507101907 19

Rowe, S., Massarani, L., Gonçalves, W., & Luz, R. (2022). Emotion in informal learning as mediated action: cultural, interpersonal and personal lenses. *International Journal of Studies in Education and Science*, *4*, 73–99. https://doi.org/10.46328/ijses.50

Silva Luna, D., & Bering, J. M. (2020). The construction of awe in science communication. *Public Understanding of Science*, *30*, 2–15. https://doi.org/10.1177/0963662520963256

Silva Luna, D., & Bering, J. M. (2022). Varieties of awe in science communication: reflexive thematic analysis of practitioners' experiences and uses of this emotion. *Science Communication*, *44*, 347–374. https://doi.org/10.1177/10755470221098100

Taddicken, M., & Reif, A. (2020). Between evidence and emotions: emotional appeals in science communication. *Media and Communication*, *8*, 101–106. https://doi.org/10.17645/mac.v8i1.2934

Tateno, S., & Yokoyama, H. M. (2013). Public anxiety, trust and the role of mediators in communicating risk of exposure to low dose radiation after the Fukushima Daiichi Nuclear Plant explosion. *JCOM*, *12*, A03. https://doi.org/10.22323/2.12020203

Tracy, J. L., & Randles, D. (2011). Four models of basic emotions: a review of Ekman and Cordaro, Izard, Levenson and Panksepp and Watt. *Emotion Review*, *3*, 397–405. https://doi.org/10.1177/1754073911410747

Vivas Peraza, A. C. (2025). Pathos as a persuasive resource for online research funding: exploring emotion-based rhetorical strategies in science crowdfunding videos. *JCOM*, *24*, A01. https://doi.org/10.22323/1486202506121354 18

Wray, B. (2021). Emotion, affect and participation: why science communication practitioners should embrace a feminist ethics of care in their work. In *Routledge handbook of art, science and technology studies* (pp. 130–140). Routledge.

Zahry, N. R., & Besley, J. C. (2021). Can scientists communicate interpersonal warmth? Testing warmth messages in the context of science communication. *Journal of Applied Communication Research*, *49*, 387–405. https://doi.org/10.1080/00909882.2021.1880017

About the authors

Luisa Massarani is a leading researcher in science communication, with over three decades of experience. She coordinates the National Institute of Public Communication in Science and Technology, based at Fiocruz (Brazil), and SciDev.Net for Latin America and the Caribbean. She is a researcher at the House of Oswaldo Cruz/Fiocruz. She holds a Ph.D. in Biosciences Education and Diffusion (UFRJ) with postdoctoral fellowships at University College London and Oregon State University. Recognised with awards like the Mercosul Prize (2014) and the José Reis Award (2016), her work spans academic leadership, international collaboration, and public engagement in science. Recipient of the Productivity Scholarship of the Brazilian Council for Scientific and Technological Development (CNPq) Level A (the

highest level) and of Scientist of Our State provided by the Carlos Chagas Filho Foundation for Research Support of the State of Rio de Janeiro (FAPERJ).

luisa.massarani@fiocruz.br

Neta Shaby is a Lecturer in Science Education at the Southampton Education School, U.K. She holds a BSc in Life Science, MA and Ph.D. in Science Education. Neta's research focuses on Informal Science Learning Environments, mainly Science Museums and learning within the family. Her Ph.D. was selected to receive the NARST 2020 Outstanding Doctoral Research Award. As a Postdoctoral Scholar at Oregon State University, she contributed to a longitudinal research project focused on enhancing the STEM learning ecosystem for middle-school youth and their families. During her fellowship at Ben Gurion University of the Negev, she explored family learning across settings and time, following families of varying socio-economic backgrounds in informal contexts such as home, the beach, the zoo, and outdoor picnics. Currently her research focuses on emotional engagement during informal science activities.

N.Shaby@soton.ac.uk

Daniel Silva Luna is a postdoctoral researcher in Communication Science at the University of Augsburg (Germany). His research specialises in science communication, particularly the role of emotions and artificial intelligence in this field. He earned his Ph.D. in Science Communication from the University of Otago and has held postdoctoral positions at the University of Antwerp and the Karlsruhe Institute of Technology.

daniel.silva.luna@uni-a.de

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