

REVIEWS

Mur-Dueñas, P. & Lorés, R. (2022) *Scientific and Parascientific Communication*. MDPI. 122 pp.

Scientific communication is an essential part of research, as it provides the public with access to findings outside the traditional specialized platforms like journals and conferences. Parascientific communication combines scientific and popular communication practices with the aim to promote citizen participation. Outreach has become a central focus of research institutions, as they increasingly organize workshops for truthful and approachable knowledge dissemination to the public. Still, science communication faces many challenges like dealing with uncertainty, generalization of results, and conveying trust in the changing state of the art. This makes the edited volume by Pilar Mur-Dueñas and Rosa Lorés an important and timely contribution to the topic of scientific and parascientific communication. The volume is a reprint of a special issue in the MDPI journal *Publications*, and the open access format of the eBook is a praiseworthy decision in the spirit of open science.

The volume introduction by Pilar Mur-Dueñas and Rosa Lorés discusses the concept of scientific communication in relation to the less researched concept of parascientific communication. The editors emphasize the “erosion of boundaries” (p. 1) between science and parascience as well as between researchers and the general public. These developments motivate the research on new digital practices in knowledge dissemination. The volume contributions are connected by three overarching research questions on 1) the difference between scientific and parascientific communication, 2) new discourse practices emerging with the boundary erosion in scientific communication, and 3) the adaptation of well-established methodology approaches to the new needs of science communication (pp. 2-3).

Jan Engberg and Carmen Daniela Maier look at multimodal genre practices in videos from the *Harvard Business Review*. They explore how semiotic modes like text, sound, and image are interactively used to create meaning in YouTube videos shared through Facebook. Another thematized level of interaction is the user exchange in the comments. The authors focus on videos from three genres using Bucher’s (2020) framework: quick study, tips & ideas, and explainer videos. They find that despite the graphical-visual efforts, the “processes of knowledge expansion are absent” (p. 18), perhaps due to the advertisement appeal of the videos (p. 20). While the qualitative analysis of the videos and commentaries

is quite detailed and informative, it would be interesting to analyse the user comments posted on YouTube, as YouTube is mentioned in the third research question (p. 6) but not explicitly distinguished in the results.

Marina Bondi provides a comprehensive analysis of the dialogicity created in four individual and four multi-authored institutional scientific blogs. The dialogue with the community is approached systematically from three perspectives based on prominent keywords. Participant dialogicity is shown to be realized through metadiscourse markers such as personal pronouns. Individual blogs are described to have more representations of the blogger as a writer (in contrast to the blogger as a researcher) (p. 30). They also directly address the audience more frequently (p. 30), whereas institutional blogs have a higher share of reported discourse (p. 30). Action-oriented dialogicity is realized through imperatives engaging the reader (*let's*), mostly in individual blogs, whereas institutional blogs rely on structures shaping the rhetoric of the debate like concessives (pp. 33, 35). Evaluative dialogue is expressed through attitudinal language of praise and criticism more prominently in individual blogs (p. 36), though both subgenres frame evaluation epistemically through certainty and probability (e.g. *could have had*) (pp. 36-37). The role of the blogger in the scientific debate is recognized to be the main difference between institutional and personal blogs, as individuals rely more on interaction with the sources while institutions focus on accurate reporting (p. 38). Overall, blogs are shown to be an interesting genre that blurs the authors' private and public identities (p. 39) to combine the likeableness of the individual subject with the competence of the professional persona in a dialogue with the community of practice.

Ruth Breeze investigates the debate on the COVID-19 vaccine through a corpus of more than 10,000 online comments on 25 articles from the (*Daily Mail Online*). The paper explores how individuals attribute expertise to themselves and external sources with the aim of building authority. The comments are classified around four major themes: the contested nature of "expert" knowledge, claiming the right to speak, denying the right to speak, and sources of authority. Knowledge and authority can receive a different weight when they are produced from personal experience and from science, politics, or the media. The comments on the breaking news are interpreted in the post-truth paradigm where some users dismiss not only experts but also the existence of truth (p. 52). In the light of the rapidly changing state of the art and miscommunication of the scientific method, the "expert" loses credibility and trust (p. 52). Breeze's solution is transparency of science and institutions, including both government and private companies like the pharma industry (p. 53).

Francisca Suau-Jiménez and Francisco Ivorra-Pérez provide another perspective on comments on COVID-19 news, namely on those challenging parascientific information. Parascientific genres here are popular news articles and their comment sections (p. 59), which act as a hybrid space between popular and scientific discourse. The paper analyses a large amount of stance markers following Hyland (2008) as well as closeness and distance pragmatic strategies in 100 news articles and 500 reader comments. Although the result tables are quite detailed, their notation is slightly confusing. For instance, in Table 1 (p. 64), the use of the asterisk * as a footnote marker before “1000” is misleading, since it gives the initial impression that it is “RF *times* 1000”. Then, the note explains that “the absolute frequency was calculated per 1000 words” (p. 64), where “relative frequency” would have been the clearer term. Still, the tables and the discussion of examples provide a comprehensive overview over the stance and heteroglossia markers in the news and the reader comments. The paper concludes on the critical nature of “participatory journalism” (p. 71), which can be both beneficial in the case of constructive criticism and harmful in the case of pseudoscience.

Carmen Sancho Guinda explores the implications for democratic discourse in the graphical abstract genre, which combines features of the emblem, the infographic, and the billboard genres (p. 76). The author brings up a good point that the public is no longer “easily persuadable” and in need of “content simplifications and popularisations” (p. 75) but rather needs a dialogue. The paper argues that it is difficult to find objective criteria on how accurate and “successful” a graphical abstract is (p. 77), yet still manages to provide a detailed classification scheme for a descriptive analysis (p. 78). Graphical abstracts are shown to leave space for creativity and insider jokes. Some more exclusive references to Western culture are claimed to be a sign of “cultural colonisation” (p. 83) and while the joke indeed adds an additional reference layer that may not be accessible to all audiences, “colonisation” is a strong term that also implies some intention, which may not be the case. The paper looks at good and bad stylisation practices and concludes with thoughts on the new trend of standardisation through abstract templates.

Julien Longhi looks at the case of Didier Raoult and the media and social media discourse around his statements on Hydroxychloroquine during the COVID-19 pandemic. Using the Alceste method, which is a type of topic modelling, the author synthesizes five classes with texts and distinguishes three of them on the efficacy of the drug, the scientific validation in *The Lancet* and the epidemic (p. 101). A filtering list for words like “www” could be useful to exclude unnecessary classes like class 3 (p. 101). The self-idolization of Raoult and arising conflicts around this COVID-19 discourse are then made evident through the modelling

of tweets, again using the Alceste method. The heated debate combines praise and criticism towards the physician and the media reporting on the issue. The paper also summarises the interaction with hashtags, where the social discourse is shown to move to parascientific and even propaganda directions (p. 109).

Manh-Toan Ho, Manh-Tung Ho and Quan-Hoang Vuong present a strategy for communicating open science called Total SciComm – “using every medium to communicate science” (p. 117). They present the Seshat study, which was retracted after reanalysis of the open dataset it was based on. This case highlights the importance of openness and reproducibility in science. The authors also emphasise the issue of speed of publication, as journal publications take longer to review submissions compared to the platforms used to express criticism – preprints, social media and blogs (pp. 116-117). The paper provides ideas for genres like the scientific novel, film/video, or art. While fiction is an effective way to promote science to a larger audience, it should be noted that its credibility is limited. The article emphasises the benefits of open science in the ability to quickly criticise peer-reviewed papers in preprints, even though the criticiser becomes more vulnerable due to the lack of anonymity (p. 119). While preprints are published speedily, they are not peer reviewed and should themselves also be taken with consideration. Nevertheless, the idea of Total SciComm is promising and can inspire researchers to explore new genres of science communication.

Overall, the edited volume combines interesting perspectives on scientific and parascientific communication. It has the potential to show the importance of science communication and contribute to the investment in resources promoting public outreach. The volume highlights the difficulty of conveying complex information that has to be perceived in a short time and attention span, as in the case of news, blogs and graphic abstracts. The contributions provide a thorough analysis of scientific and parascientific communication from different perspectives, making the open access book useful for researchers in academic discourse, scientists interested in public outreach, science communication workshop developers, and students looking for replicable case studies. I therefore recommend the book for everyone interested in the intersection between media and academic discourse.

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References

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