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ESSAY

Science in the age of podcasts

A powerful 21st-century medium affords new opportunities for learning and creative thinking

By **Alex Gomez-Marin**

In his visionary 1964 book *Understanding Media: The Extensions of Man*, the Canadian media theorist Marshall McLuhan claimed that “the medium is the message,” meaning that what is said is less consequential than how or where it is said (1). Accordingly, he argued, the study of human communication should give primacy to the communication medium itself.

If McLuhan is right, then podcasts are not only an atypical species in the media ecosystem but a potentially transformative one. The combination of message, messenger, and moment makes them an idiosyncratic medium for conceiving and communicating burgeoning ideas. This is therefore a timely moment to reflect on what this media form can offer to science and science communication writ large.

In 2019, in one of the first and most thorough studies of the science podcast-

ing landscape, Lewis MacKenzie reported that the total number of such programs increased linearly from 2004 to 2010, followed by an exponential growth between 2010 and 2018 (2). And this was before the COVID-19 pandemic. Shows continue to increase in number, reaching growing audiences in many different countries, languages, and cultures.

The many merits of podcasts are obvious but nontrivial. Such programming is often cheap or even free, both to produce and to consume. And their digital nature allows podcasts to reach not only very large audiences but also diverse ones. Crucially, podcasting bolsters complexity and delivers pluralism. The intimate is made public in a bottom-up ecology of individual creators and self-organized communities.

In addition, and especially relevant to the dissemination of scientific knowledge, podcasts disentangle human communication from time and space. Conversations that might once have been held at meetings or specialist conferences can now be accessed from anywhere, helping to reduce the carbon footprint of knowledge diffusion, while sedimenting an invaluable online library for new learning. Hearing

Podcasts can spread scientific knowledge to diverse audiences but can also exacerbate echo chambers.

different voices discussing science in different ways may also help dispel outdated stereotypes of whom science is made by and for, while the informal, long-form, conversational nature of this type of medium encourages candid discussion that helps listeners understand the nuance of scientific knowledge making, bringing to the fore the perspectival and participatory nature of rational inquiry.

Of course, a dark side of podcasting exists too. We are all prey to clickbait content and audience capture dynamics, which can reinforce echo chambers. Content production for its own sake can be a pitfall too. Misinformation and disinformation, however, are arguably its most dangerous perils.

Should we attempt to filter out contentious “scientific” material? This leads to broader philosophical and sociopolitical questions. Censoring untrustworthy podcasts is likely to be not only fruitless but feckless. Follow “the science,” some experts say, but science is not monolithic. Beyond compulsive accusations of conspiracy or collusion, podcasting can nurture an ethos of consilience. Curation, rather than censorship, will become a true art form in times to come.

So, what is really at stake? Why should scientists care? Not long ago, the paradigmatic way to produce and disseminate scientific knowledge was by letters and lectures. We now post preprints, attend virtual conferences, and download papers electronically. Drawing on notions advanced by American cultural anthropologist Margaret Mead regarding the generational making and remaking of society (3), we must realize, celebrate, and capitalize on the fact that early career and future scientists fall within a demographic that is the primary consumer of podcasts today (4). Podcasts are thus poised to play a central role in how these individuals make and take scientific knowledge. But podcasting’s greatest virtue is probably its fitness to present the scientific enterprise as it actually is: an ongoing complex process of intersubjective consensus, rather than a machine for the making of unquestionable truths. ■

REFERENCES AND NOTES

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