

Science journalism: In search of a new identity

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Abstract

Science journalism is undergoing a major transition due to changes in the relationship between science and society and dissemination via digital and connective technologies, as is the case with other branches of journalism. The changes occurring in science journalism may concern medical writers who deal with communication targeted at non-experts, in particular patients. This article presents a number of scenarios and a series of significant results of research that fuel the debate on the future of the information systems dealing with science, technology, and healthcare. Although the outlines of a new professional identity are still indefinite, some distinctive features emerge with more clarity than before. Science journalists will, on the one hand, have to integrate their traditional science translator skills with those of organisers and *curators* of the knowledge generated by different communities; on the other, they could become more and more the generators of new knowledge themselves.

Introduction

Medical writers should consider what has happened in science journalism in recent years, since at the intersection between the two realms, namely the production of material addressed to a non-expert audience (in particular patients), they may face similar requests for change as those their colleagues are facing. Increasingly, science journalists are expected to broaden their cultural, technical, and relational skills, and to show greater professional flexibility. This is because



they may have to face the growing demand for democratic participation that manifests itself in social controversy over scientific and technological issues. Also, like all other journalists, they have to respond to changes in the modalities of information production and distribution in the digital era.

Science journalism between tradition and present-day challenges

Although the use of mass media to disseminate science dates back to the birth of newspapers in the 17th century, the emergence of editorial figures specialised in reporting scientific facts only occurred about a century ago.¹⁻³ For a long time, science journalism was basically intended to reconfigure technical information through words and images to make it accessible to individuals lacking expertise and specialised terminology. The context of the research and the social implications of knowledge were not explored, at least until the 1960s, when environmentalists, pacifists, and animal rights activists started disseminating in the press images of science that were less reassuring than those seen before.^{4,5} As a consequence, a series of limitations to traditional news reporting were singled out, spawning a debate on the crisis of science journalism that is still relevant today. Disseminators of scientific information are in fact often criticised for their excessive closeness to their sources, the lack of a critical outlook, and failure to contextualise information.⁶ These

criticisms are also signals of a transformation in the relationship between science and society. Over 20 years ago, a number of sociologists spoke of new forms of knowledge production that required a new “contract” between researchers and citizens. If science has traditionally been expected to produce reliable knowledge and communicate its discoveries, the new contract must ensure that scientific knowledge is “socially robust”, and that its production is seen by society to be both transparent and participative.⁷⁻⁹ Such changes represent a challenge for the communication of science.

An inescapable conversation

The practices of science journalism, according to which scientists know things that the public is ignorant of and the media is expected to translate the complex to the simple, reflect the assumptions of the so-called deficit model of science communication. Alternatives to this longstanding unidirectional and paternalistic approach are based on the results of sociological and ethnographic research that, in the 1990s, started to examine for the first time the distinct sets of audiences in science. Such investigations demonstrated that non-experts have an ability to comprehend, discuss, evaluate, and generate knowledge that had been previously underestimated.¹⁰⁻¹² The impact of such studies coincided with a call from relevant institutional bodies to shift to more dialogic science communication between researchers and citizens. A review of the dialogue-promoting

activities was identified, for instance, in an influential report published at the beginning of the 21st century in the UK by the House of Lords Select Committee on Science and Technology.¹³ The report recommended that increased openness from scientific institutions should play an integral role in scientific decision-making. Thanks to this sort of initiative, “involvement”, “bidirectionally”, and “interaction” gradually became new keywords in the science communication field that express an increasing demand for public participation in the governance of science and technology.¹⁴

It is worth underlining the leading role played by patient associations and health rights movements. For those who work in the field of medical writing, it is relevant to observe the growth in the number and visibility of patient advocacy groups in recent decades. Such groups ask to take part in decision-making regarding not only therapy but also research protocols and medical ethics. A seminal work in this context is a sociological investigation published in 1996, which shows that non-scientist AIDS activists gained enough of a voice in the scientific world to shape medical research.¹⁵ The growing role of patient advocacy groups created a momentum that has had a significant impact on communication strategies and that, according to various commentators, reflects the dominance in recent decades of a more sceptical attitude towards doctors, scientists, and other experts. It also brought about new concepts of the rights of patients that are the basis of current bioethics debates.¹⁶ Patients’ mistrust is combined with another media-related phenomenon that is relevant to those operating in the biomedical

field: the so-called medicalisation of scientific news, according to which news relevant to biomedicine not only dominates public communication of science, but also (despite not always having been dominant) has become the prototype of science in collective perception.¹⁷

In such a framework, in which lay knowledge is more highly valued and public priorities are seen to be relevant to science, one has to consider the difficulties arising in the implementation of more dialogic science communication practices. While there is no doubt that requests from non-experts to take part in decision-making relating to science and technology are a current issue, it is hard to say whether the practices aimed at strengthening participation and public engagement are just rhetorical devices that do not reflect true empowerment.¹⁸ Besides, not everyone may be in favour of giving non-experts opportunities to shape and transform scientific research. The solution is not simple. Without doubt, however, the answer to these challenges cannot be found in a diminished, restricted interaction between scientists and citizens, now intrinsically unfeasible, but in reinforcement of the public forum for debate.¹⁹ Whatever the dynamics of social control over science may be, the dialogue between researchers and citizens will only function if there emerge new science mediators who are able to handle communication processes that reflect a multidirectional and more dynamic interaction with participatory audiences. This scenario requires that communicators and journalists fine-tune, or in many cases acquire, new relational skills and, at the same time, possibly generate content in an even more specialised manner than today.

Science journalism and information systems

Digital platforms and social networks have introduced a series of innovations that have brought into question the legitimacy and usefulness of a great part of traditional journalism.²⁰ This is also true for science writing, as shown by many recent analyses on how the landscape of science journalism is changing in the digital era.²¹⁻²⁶ The emergence of scientific blogs, written by researchers or science enthusiasts often willing to generate quality content without demanding adequate compensation, together with the ever-increasing trend for universities and research centres to communicate directly with their audiences, bypassing mediation by journalists, strongly compete against the work of professional science writers. In addition to competition from bloggers and institutions, science journalists, like other journalists, face new challenges, which include the learning of multimedia and digital skills, tighter deadlines, and a 24-hour news cycle. Professional science writers are paid less than before, work under more stressful conditions, have fewer opportunities to get inside a newsroom (because the newspaper sections dedicated to science and technology are often the first to be cut), and must acquire new technical expertise not required in the past.²⁷

New roles and professional practices

In response to the above-mentioned trends, new models of science journalism education are currently being studied.^{28,29} The future of journalism education in general is also being discussed. Possible scenarios include creating digital-first journalism schools to promote greater collaboration between practitioners and scholars in order to define new curricula.^{30,31}

Among the most interesting projects that resonate with the debate on scientific and healthcare information is so-called knowledge-based journalism, whose distinctive features were outlined in 2015³² by American researcher Tom Patterson, director of the Journalist’s Resource project of Harvard Kennedy School’s Shorenstein Center. According to Patterson, the problem of the decline in news quality requires a new way for journalists to relate to knowledge, in other words a new way to employ knowledge and practices traditionally linked to the academic world, and in particular to science, in order to produce “journalistic” content. This creates a scenario



Table 1. Differences between conventional and emerging science journalism

| Type of journalism | Main roles | Main competencies | Main mission |
|--|--|---|---|
| Traditional science journalism | Translator of scientific information for lay persons | Writing, knowledge of scientific disciplines, storytelling | To popularise science in order to stimulate comprehension of scientific advances for the sake of economic and social progress |
| Emerging and future science journalism | Curator and generator of new knowledge | Multi-media and digital production, numeracy, multi-disciplinarity, understanding of social media | To penetrate the social, political, and economic dimensions of the knowledge-based society |

wherein journalists become producers of new knowledge, and not simple mediators.

Other research suggests that journalists should acquire new skills such as audience analysis, the ability to read and interpret data and statistics, and the comprehension of metrics.³³ More broadly, such studies reinforce the idea that there are many opportunities nowadays to create models of journalism informed by the scientific method, especially with the rise of the web.

Another area of discussion, focussed more specifically on science communication, underlines that future science communicators need multidisciplinary skills to penetrate the social, political, and economic dimensions of the knowledge-based society.³⁴ It is no coincidence that some researchers believe that today “the challenges of independent science journalism lie more than ever in interpretation and contextualisation, or, as we might say, information about information”.³⁵ However, it is also true that one of the most obvious recent changes in public communication of science is the rise of public relations activities – and of active suggestions of communicative content and materials – as an increasingly meaningful component of research institutions’ communication initiatives. This means more professional opportunities for science writers, although at the same time it marks a “shift from a logic of journalism towards a logic of corporate communication”.³⁶

In a more general context, one needs to consider the extent to which all these considerations are reflected in the reality of present-day production. There are few studies on this topic, but it is worth mentioning research from a few years ago which mapped the ecosystem of online science journalism in US and UK elite media. The people behind the research concluded that, compared to over 10 years ago, present-day science journalists play a plurality of roles, “including those of curator, convener, public

intellectual and civic educator, in addition to more traditional journalistic roles of reporter, conduit, watchdog and agenda-setter”.³⁷ They also underlined that, compared to traditional science journalists, online science writers established more collaborative relationships with their audiences and sources and, in general, showed a more critical attitude towards scientific communities, industry, and political organisations. Table 1 summarises the differences between conventional and emerging science journalism.

Conclusions

More specialised and closer to scientists’ ways of thinking and working, yet at the same time more oriented to social media and more interactive. More precarious, more independent of newsrooms, but freer to propose themselves as opinion leaders. More concerned with the issues of science democratisation, but also more integrated in and suitable for the promotional logistics of research institutions. Endowed with the traditional professional tools of the translator, but also driven to broaden their horizons towards a multidisciplinary approach and the acquisition of technical and productive skills belonging to the online world. The picture of science journalists of the future that emerges from this review of research and discussions reflects an ecosystem inhabited by an increasing number of true techno-scientific hybrids. There is probably still a long way to go before a new professional identity for those who were once called science writers is defined, but it is clear that if new professionals want to maintain a significant role in the public discourse on science, they can’t, as in the past, refer only or almost only to the tools of the translator to characterise their profession. They will have to carry out tasks that are increasingly more varied and less linear. ■

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