



Science as a beat in journalism: Current status and implications for the future

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Abstract

This paper's main objective is to review existing literature on science journalism, focusing on the current status of the discipline and the implications of the reviewed literature going forward. The paper is driven by the fact that there has been reported conflict regarding how journalists and scientists view scientific information. Journalists have always lamented the insufficient support and cooperation from the science community. On the other hand, scientists argue that journalists' work is to disseminate scientific information through mass communication media and channels to mass audiences. Because of this acrimony, reporting on science as a beat by the media has been affected, leading to the scanty available literature on science journalism as a discipline. Empirical existing literature was searched through the search strings SCI* and JOUR* in peer-reviewed journals and the literature reviewed to ascertain the current status of science journalism, the research gaps and areas for future action. Journalists need support to keep in touch with local science institutions and other stakeholders to follow, monitor and report on new science developments. In addition, scientists need to embrace mass communication as an avenue through which they can share their scientific findings with the mass audience. Equally, scientists can collaborate with journalists to deliver scientific information to the mass audience through the media. Based on the findings and recommendations of the literature review, the paper argues a case for science journalism going forward.

Key Terms: Beat, Journalists, Science, Scientists, Science Journalism.

INTRODUCTION

A number of researchers have discussed how science is often miscommunicated and misrepresented through the media by offering stereotypical images of scientists, which in turn limits the public's understanding of the nature of science (Brossard & Scheufele, 2013). Such researchers have advocated the need to effectively and efficiently communicate scientific information. Turney (2001), for instance, notes that every successful nonfiction writer will tell you that the best way to interest and engage the general reader is to narrate and that narration, as a text, involves struggles, conflicts or adventures, heroes and villains, complication and resolution. This explains why narration has been used in communicating scientific non-fiction information in various contexts and fields, journalism being no exception. This has made narratives and science subjects of analysis in science journalism.

Science journalism, a form of journalism that is dedicated to collecting, analysing and reporting science-based information in news stories, is needed now more than ever. In a world where the public and marketers increasingly control their own information delivery through online channels, newspapers and magazines, which have long been the main sources of jobs for science journalists, are failing in many places (Dunwoody, 2014). Journalists who have left media organisations are now scrambling to find their footing elsewhere. If this trend continues, it will be years before successful models for the delivery of substantive science journalism emerge from these fledgling ventures.

The majority of science content in African media is translated from European or North American media outlets (Shanahan, 2006), with little or no localised context (Tagbo, 2010) and rare comments from domestic scientists (Joubert, 2007). Likewise, developing parts of Asia have been found to source most of their science news output from stories originally published in the Western media. Many science reporters have arisen in many countries over the twentieth century (Metcalf & Gascoigne, 1995). In addition to establishing country-specific science writers' organisations, global associations like the World Federation of Science Journalists have emerged, and formal science journalism training is

now being provided at universities around the world (Dunwoody, 2014). As the number of journalists increased, so did coverage, as a number of longitudinal studies covering the later part of the twentieth century indicated (Metcalf & Gascoigne, 1995; Bucchi & Mazzolini, 2003).

Williams and Clifford (2008) accounted for 82 certified science journalist positions in the UK private and public mass media in 2009, while the Association of British Science Writers (ABSW) has several hundred members. A survey conducted in Latin America obtained responses from 275 journalists from 16 countries in the region (Massarani et al., 2012). The World Conference of Science Journalism, the biggest biennial global event on science journalism, usually attracts around 1200 professionals per gathering. In 2020, the virtual Science Journalism Forum was held for the first time, bringing together 891 participants. Though dismal, these statistical findings illustrate science journalists' growth on a global scale.

In Kenya, currently, there is an ongoing discussion on the role and place of GMOs by the public. Scientific organisations have become increasingly worried about the way in which the media have treated these issues (Omondi, 2007). University departments and research institutions are working together to develop courses on science journalism, while some universities have offered science journalism for the last ten or so years.

Research has shown that the bulk of what passes for science writing in a number of countries, both in the developed and developing world is all about medicine and health (Bauer et al., 2013). In relation to the British press in the second half of the twentieth century, Bauer has defined this trend as the medicalisation of science news. Pellechia (1997) has found out that during the same period, a group of leading US newspapers focused on health and medicine in more than 70 per cent of their stories. Einsiedel (1992) established the dominance of health topics by analysing science stories in seven Canadian newspapers. The same themes, medicine and health, also dominate the television reportage (Gregory & Miller, 1998; León, 2008; Lehmkuhl et al., 2012). Research in Asia and Africa has found that science-related topics are allocated comparatively little space

and often used as space or time fillers, as opposed to leading news items, and occasionally left out to give space for last-minute paid advertisements (Dutt & Garg, 2012; Ekanem, 2003; Michael & Binta, 2013; Schanne & Spurk, 2009). It is because of these various reportage trends of science that this paper seeks to explore science as a beat in journalism

LITERATURE REVIEW

Bauer et al. (2013) have studied data from four science journalists' surveys archived at SciDev.Net to get a glimpse of global science journalism in the twenty-first century. The researchers employed data from the 2009 World Conference of Science Journalists from a survey of 179 participants held in London; a survey of 320 journalists from Latin America carried out in 2010 and 2011; a data subset from a larger survey project from six regions, countries that are primarily developing; and original survey data from 93 additional journalists primarily from Asia and Africa, gathered in 2012. The researchers conclude that the complex nature of this aggregated analysis makes it difficult to argue for the generalisability of the sample. Bauer and his associates also note that science reporters, like the majority of the specialist reporters' classes, have regularly constituted a small subset of all journalists in media organisations worldwide. For this reason, science stories remained relatively minor components of media coverage.

A review of science coverage by four Greek newspapers has also established that the proportion of the news hole given over to science ranges from 1.5 to 2.5 per cent (Dimopoulos & Koulaidis, 2002). Equally, Pellechia (1997) found a small portion (2%) of science coverage in the United States newspapers. Metcalfe and Gascoigne (1995) found a small proportion of science coverage (1%) in Australian newspapers. Political coverage accounted for around 25 per cent of all coverage in Greek newspapers. Sports comprised 15 per cent of stories, and science accounted for only two per cent (Dimopoulos & Koulaidis, 2002).

A study of how a major Italian newspaper wrote about science over the course of 50 years indicated, "Biology and medicine accounted for more than half of the stories. However, Bucchi and Mazzoline found out medicalisation of science was particularly pronounced

in stories written for the newspaper's special supplements and sections. In contrast, science news featured on the front page was dominated by physics and engineering stories. The writers conclude that science journalists may be making a conceptual distinction between news and news you can use, with the latter focusing more heavily on health and medicine topics" (Bucchi & Mazzolini, 2003).

A recent review of science in BBC News programming presented a significantly more optimistic image of the UK position. A news coverage analysis over the three months course in both 2009 and 2010 established that one in four news programmes comprised at least one science news item and that half of the major television news bulletins contained science news reporting (Mellor et al., 2011).

"In an analysis of television science programmes in 11 European countries, great variation in the number and nature of such programmes. They concluded that market structure was a major predictor of that diversity. For example, with the exception of Britain, most science programming occurred on public service channels. The more such channels available in a country, the study found, the more science programming. However, only some science programmes were dedicated to science news in these countries. The most common types of programming were either longer-form, magazine-style coverage of science issues such as Britain's *Horizon*, Germany's *Terra X* or Austria's *Newton*, or what the team called 'advice' programmes, often health-related with question and answer structures" (Lehmkuhl et al., 2012).

According to scientific research in Dutch newspapers, "most stories eschewed complex process information. In ways typical of other types of journalism, science journalism seeks to hang stories on *traditional news pegs*, characteristics of real-world processes that are proven audience attention-getters. Those pegs include timeliness, conflict and novelty. Thus, for example, rather than dip into a scientific research process at some haphazard stage, the science journalist waits until the completed work is on the cusp of publication in a scientific journal. That moment of publication offers a prized, timely angle, an opportunity to grab

the attention of a reader/viewer" (Hijmans et al., 2003).

In Africa, UNESCO (2011) found that 85 per cent of science media content takes the form of short, straight news stories. This overwhelming proportion of straight news suggests an overall preference for episodic, event-based science news over thematic, issue-based coverage. The lack of issue-oriented news reporting is especially common in countries of lower income, where news of long-term science-related issues peaks during special events (climate summits, World AIDS Awareness Day) or during short periods of intense debates but does not last long enough to sustain public interest (Prat et al., 2002; Shanahan, 2009; Boykoff, 2010; Panopio & Navarro, 2011; UNESCO, 2011; Kakonge, 2012; Kuppuswamy & Maheswari, 2014).

The majority of science content in African media is translated from European or North American media outlets (Shanahan, 2009), with little or no localised context (Tagbo, 2010) and rare comments from domestic scientists (Joubert, 2007). The heavy reliance on foreign sources troubles many observers for many reasons. Without an adequate understanding of basic science processes and some background knowledge about the science subject in sources, translators are often poorly positioned to fully understand and/or critically assess foreign research reports and science news stories, let alone to crosscheck or transfer science facts and messages effectively into the local context (UNESCO, 2007; Plessis, 2008). Instead of actively pursuing and rigorously examining science sources, for instance, they often conceptualise and develop stories based on available research reports, press releases or PR events (Massarani, 2014).

RESULTS AND FINDINGS

The World Federation of Science Journalists, through its peer-to-peer mentoring projects in Africa, the Middle East, Latin America and Southeast Asia, has initiated significant training programmes for science journalists (Nguyen, 2014). However, these efforts have been derailed by limited funding. Despite funding limitations, these programmes have created avenues for upcoming science journalists to develop their skills in scientific reporting. Many science journalists have since established their professional networks or

associations at home. Such efforts need to be supplemented by other international partners for science journalism.

Shanahan (2006) has established that much science content is translated from European and North African media channels. Besides, Shanahan argues that such science content appears alien to developing countries, especially in Africa, since the content needs more local context (Tagbo, 2010; Joubert, 2007). Such content also is devoid of comments from domestic scientists. Therefore, need for science journalists to give such news stories a local context to make them more significant and relevant to local audiences. This will ultimately improve the significance of the news stories based on science as a beat.

The literature review has revealed that a majority of the science stories in media outlets in developing and developed countries are about medicine and health (Bauer et al., 2013). Bauer and his associates have called this medicalisation of science news. The paper recommends exploring other science topics, such as climate resilience, urban resilience to climatic hazards and many more contemporary science topics incidental to human survival. This way, the scope of science coverage in the media will be enhanced.

A review of literature from Asia and Africa reveals that science-related topics are given relatively little prominence in terms of print space, and if given any prominence, the science stories are used as space/air-time fillers because the first priority is given to adverts and commercials with the remaining spaces/airtime described in media language as *holes* left to science content (Dutt & Garg, 2012; Ekanem, 2003; Michael & Binta, 2013; Schanne & Spurk, 2009). Even in economies (China, India and Brazil) where science and development are correlated and given emphasis, science journalism is still peripheral as a news beat (Dickson, 2012; Navarro et al., 2010; Ramalho et al., 2012; Zhao et al., 2014; Massarani, 2015). It is, therefore, paramount to allocate relatively adequate space and air time to stories on science such that the science beat balances out with other beats in terms of coverage. In some cases, science as a beat can be combined with other beats, such as development, to

give more significance to the scientific message conveyed in news stories.

From the published literature (Raj, 2011), there is a tendency for editors in print and electronic media to focus more on the selling aspect of a news story and in the process, this tends to ignore stories on science which in essence are critical to development and enhancement of the quality of human lives especially in developing countries. For example, in developing countries with a lot of vulnerability to climate change hazards such as rising sea levels, flooding, drought, forest fires and biodiversity loss, one would expect science stories on these topics to be given more prominence. In the process, this will make climate change science the subject of the news and a focal point in the people's sustainable development quest.

The lack of comprehensive critical science news reporting has been reported as a challenge in developing countries (UNESCO, 2011). UNESCO laments the prevalence of reporting science as straight news as opposed to the critical and comprehensive coverage of science as a beat in mainstream media. In particular, UNESCO has found out that in Africa, 85 per cent of science content in the media is in the form of straight news and that there appears to be a void in analytical and in-depth

coverage of science in journalistic forms such as features and commentaries. The paper recommends an analytical and in-depth analysis of science as a beat beyond news stories. This will expand the coverage of science to other journalistic genres, such as commentaries and features.

One of the issues raised by scholars in science journalism is its quality. This has been compounded by the need for essential scientific knowledge and skills, especially those relevant to engaging the lay public on scientific innovations and inventions, together with their implications. This has been seen in situations where science reporters often conceptualise and write stories based on research reports, press releases and public relations events (Massarani, 2014). There is, therefore, a need to adequately train science reporters in reporting scientific innovations and inventions in a manner that the lay public is able to relate to and conceptualise.

CONCLUSION

Going forward, there is a need to strengthen the financial, technical and intellectual capacity of science journalists of media houses in the devolving world, notably in developing countries, to be able to generate science news reports and give them a local perspective and content. This will minimise the overreliance on foreign media.

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