

The Challenges of Communicating Research Findings: A Journalist's Perspective

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Abstract: Science reporting is not a daily routine in most media houses in Kenya and worldwide at large. Unlike sports, politics, business, arts and culture, Science reporting is generally placed on the fringes of mainstream journalism. A critical analysis of media operations, shows that there are various deep-rooted factors that tend to keep science at the bottom of newsgathering, packing and dissemination. The beginning point is journalism schools that traditionally avoid admitting students with science backgrounds or strong interest in science reporting, preferring those excelling in literature, languages, history and others. The courses offered hardly mention the coverage of science. In addition, issues such as media social responsibility, newsroom competition, newswriting basics and how they affect reporting complex scientific issues have been extensively addressed. The article has also addressed the critical challenges facing science reporting, bridged the divide between science and journalists by looking at the tips crucial for science journalism.

Keywords: Communicating Science; Research Findings; Scientific Communication; Science Communication; Scientific Culture.

1. INTRODUCTION

Communicating science research findings is the presentation of science processes and results to the public in a language that can be understood by a greater number of nonprofessionals or lay people. It has been evolving and changing over time. The term has different meanings across the world—in the United States, it is understood as scientific communication, but also as a meaning that encompasses the science communication to peers and the lay citizen (Galvão, Rayanne, and Noll, 2021). In China, the term popularization of science is used to refer to dissemination actions, events, and initiatives aimed at society in general (Bucchi and Trench, 2014). In the United Kingdom, the term public engagement of science has been conceived from the perspective of public communication in various sectors (Bucchi and Trench, 2014). In Brazil, according Galvão, et al. (2021) there is a differentiation between “science communication” and “scientific communication.” The first term refers to publication among those who are not part of the scientific environment, and the second refers to communication between specialists (Bueno 2015). Even though there

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are different definitions and viewpoints, in several countries, the two terms have similar purposes. In the milieu of this paper, communication professionals such as journalists and researchers are the main protagonists in the activities and works of scientific information processing and dissemination. The relationships between the two parties (journalists and researchers) is not always easy. Kreps (2017) suggests that the relationship between journalists and scientists should aim to integrate the institution, its researchers, and communities through interaction and systems for exchanging messages and communication for the promotion of science and science information uptakes, which still represents a major challenge for public institutions and their audiences. These collaborative working relation should be adopted to make communicating science an easy task.

It is apparent that two distinct fields of action are at play; the scientific culture and the culture of communication (Peters 1995). Each of them has specificities and particularities that are often not clear, thus creating barriers in this relationship. Despite this, the two poles need to connect, mainly because communication professionals are relevant for scientific communication and scientific information uptake. Among the activities to be carried out by them are selecting and publishing information on different channels according to journalistic criteria, sharing messages, paying attention to regulations, and thus, being effective in their science communication processes (Fischhoff 2019; National Academies of Sciences, Engineering 2017). Additionally, there is need to establish a continuous dialogue between researchers and journalists, whose challenges in relating to people often comes from their own lack of knowledge about people from different groups (Berger 1995). Furthermore, to the work they do, this unknown environment may create uncertainties in the relationships between communication professionals and researchers. This is also due to historical contexts, the dynamics of institutions, and the lack of science communication practice especially in African countries. Another obstacle related to this context is the fragile institutional support to the development of this integration and interaction between professionals from different areas

The institutional environment also does not focus on stimulating and promoting science communication activities carried out with diligence and priority by the communicators or their researchers. In regards to this context, the institutionalization process in this field is established with the creation of norms that may, in a certain way, provoke a change of internal behavior in the organization (Rhodes, Shulman, McClaran, 2020). The articulation and carrying out of debates and actions for scientific dissemination along with communication campaigns may contribute to this process of behavioral change and the creation of a culture of science communication, stimulating the creation of identity among groups and expectations of benefits, and personal and professional satisfaction (Rimal 2005). In this regard, it must be considered that today, more than ever, actions are needed to promote dialogue between the institution, the researcher, and the communities in search of a connection that is still less explored by scientists and those responsible for public decisions. Among the ways pointed out by the National Academies of Sciences, Engineering (2017), are forming partnerships and developing a research dissemination agenda.

In this perspective, numerous studies point out the need to carry out planning in communication, treating this communication as strategic in the name of science in addition to establishing clear objectives of dissemination (Peters 2013; Besley 2020). According to Besley (2020) one of the problems highlighted is that organizational communication is still concerned more with contributing to the organization or institution and less with promoting scientific knowledge, given that the organizations themselves do not prioritize the advancement of science. Specifically on the relationship between scientists and communication professionals in and outside the organizations, Koivumaki and Wilkinson (2020) emphasize that negative impacts on the quality and cohesion of scientific dissemination may occur due to the need to establish an identity and purposes between these two groups. Furthermore, Rodder (2020) places this field of discussion—science communication in organizations—as an emerging field in the conceptual perspective for an “organizational sociology of scientific dissemination.”

2. THE CRITICAL CHALLENGES FACING SCIENCE REPORTING IN MEDIA ORGANIZATIONS

Although the trend is changing, science reporting is not a daily routine in most reputable media houses worldwide (Cordero-Hidalgo, Tarango, Contreras, and Romo-González, 2017). Science reporting, unlike sports, politics, business, arts and culture is generally placed on the peripheries of mainstream journalism. An examination of media operations shows that there are various deep rooted factors that tend to keep science at the bottom of newsgathering, packing and dissemination as pointed out below:

2.1. The Admission Criteria and Qualifications to Journalism Schools

It begins with journalism schools that traditionally avoided admitting students with science backgrounds or strong interest in science reporting, preferring those excelling in literature, languages, history and others. The courses offered hardly mentioned the coverage of science. Today, the few journalism schools that design courses on science journalism are considered “special or unique.” This means that the coverage of science is yet to be integrated into the core or the basics of overall journalism training. Journalism schools, with newspapers or FM radio stations within universities, hardly encourage their students to cover, for example, departments of engineering, medical schools, and colleges of biological and physical sciences. Still those who are chosen to learn the art of reporting in-house or given on the job training are not introduced into the world of science journalism. However, to be fair, there were some early indicators that the mass media was bound to pay attention to the coverage of science. These included giving mostly health and agricultural experts space or airtime to answer specific questions and focus on common or unique problems affecting some readers and listeners.

2.2. Journalistic Stereotypes and Myths

Some of the most difficult challenges facing science reporters are linked to stereotypes and myths associated with the work of journalists and scientists, that have yet to be overcome. There is an assumption that when dealing with serious academic, professional and research issues, scientists have their own communication outlets especially peer-reviewed and high indexed scientific journals that are inaccessible to the general public (Cordero-Hidalgo, et al., 2017). Serious scientists, therefore, have no business dealing with the mass media as an important outlet. Science writers have to routinely examine and extract information considered important to the public from journals dealing with various aspects of science and technology. Again, journalists are suspicious of scientists, who seek to disseminate or channel information on important findings through mass media unless they could be linked to ongoing emergencies and the government.

2.3. The Immediacy and Perishable Nature of Media Products

The challenges of science reporting seem to multiply because scientific experiments and findings tend to take a long time when the media seems to seek instant answers. Thus innovations, new products, services, theories and other findings; derived from prolonged research activities initially sound ‘distant or remote’ while the mass media business thrives on the ‘immediate and is highly perishable.’ The above serves as inbuilt sources of conflict between the mass media and researchers. Few journalists are prepared to wait until research results are published in some peer reviewed quarterly or annual science journal. When journalists push for timeliness and proximity, researchers feel harassed and pushed beyond ethical limits. However, there are emerging trends in which the mass media carries stories about the initiation of research, the aims, possible results, impact and public good.

2.4. Use of Scientific Jargons and Complicated Statistics in Scientific Manuals

Scientific research remains an endless source of new and old terminologies that drive journalists mad. Mountains of raw data contained in research papers worsen it. It is a major professional challenge for even those with the best mass communications skills when one is to reduce piles of jargon and statistics into short, simple and clear message sentences and paragraphs which, for example, reduce 15-page research paper into quarter page news story. All these tend to push journalists to depict scientists as poor communicators. Even worse researchers may be depicted as experts who hide their failures in complex data and terminologies. This in turn leads to scientists being wrongly branded as poor sources of information. Equally, scientists see journalists as poorly- trained or lazy professionals who want everything chewed for them. They are incapable or unwilling to extract important information beneath piles of vital data and terminologies. For both the researcher and science reporter, things get worse when dealing with editors who believe that science only makes news whenever new products or services discoveries emerge. In such cases generating news and features based on the “scientific process” remains an uphill battle for most science communicators.

2.5. The Social Responsibility Demands

Sustainable coverage of science remains elusive for many media houses. To cope with what may seem as unlimited challenges, even skilled science reporters first need to develop at least some strong interest in the coverage of science issues. They also need to

believe that they have a professional, ethical and social responsibility to effectively cover various aspects of science and technology, especially the people impact or improvements in their lives. Science journalists, like others in the fourth estate are the people's watchdogs. They serve as 'the eyes of the unseen and ears of the unheard' in all their professional activities. Despite being science journalists they are always bound to ask, 'what is the people impact and is it for the common or public good?' According to Otula (2008), some journalists are bound to generate stories on various aspects of science and technology. Consequently, what scientific researchers see as noble efforts to expand the frontiers of knowledge and civilization may generate negative mass media coverage when journalists consult various sources or inject other socio-economic, political and cultural dimensions.

2.6. The Issue of Balancing News Stories

One of the professional challenges facing science writers is linked to 'balancing' stories that may be scientifically deficient. One does not always balance science stories the way political writers do by simply getting opponents' views that may be based on propaganda. When sources seem blindly opposed to some scientific products, services and research activities without credible proof or explanation they often resort to propaganda that the media is expected to carry as facts in 'balanced' stories. This is particularly common when dealing with certain activists including anti-genetically modified (GM) crops, traditional healers, and even top professors ranging from those with fake HIV/ AIDS cures to those saying HIV does not cause AIDS with no scientific proof.

2.7. The Diverse Nature of Science Issues

Another major challenge is linked to the fact that science issues tend to be diverse ranging from space science and engineering to the alarming evolution of highly drug-resistant tuberculosis (TB) and malaria germs apart from genetically engineered crops and microbes. Thus apart from handling various science stories, there is also need to specialize and cope with rapid changes in the world of science and technology. In Africa; health, environment, agriculture and emerging world of biotechnology are at the core of science reporting.

2.8. Coping with Newsroom Competition

Despite the increasing realization by media houses that there is need to improve the quality and quantity of science coverage, science writers have to be more competitive and innovative in the gathering and packaging of their stories in an environment that seems to regard them as outsiders. Science stories have to compete for space and airtime against others from the world of business, art, music, sports, politics, education, conflicts, crime and accidents (Otula, 2008). In cases, for example, where a media house has a weekly science page or programme, there is need for integrating science into every section of the newspaper apart from being included in the news editor's list of the daily items. Issues on diet and athletics or a focus on various aspects of sports medicine could appear in the sports pages. A science writer could, for example, target the features section with a profile of a leading scientist thus creating room to highlight important science activities linked to the expert. Similarly, science stories can be given business angles. Editorials focusing on specific issues credibly can also be generated. To survive in newsrooms, one has to come up with innovative strategies of making science stories earn space and airtime. Science journalists should be prepared to generate stories that are 'complete' meaning informative, timely, interesting, credible, effective and with appropriate background information. A good science journalist needs to have a list of story ideas or issues to cover without waiting for the usual assignments from the news desks. This helps to ensure sustainability and initiation of routine beats. It is important for one to try and run a series of stories when dealing with important issues. It creates some impact if effectively handled. One must have a list of various important sources of information including their phone numbers and e-mail. A science writer needs to follow up issues. The tendency to forget to updates issues is a widespread weakness amongst journalists.

3. BRIDGING THE DIVIDE BETWEEN SCIENCE AND JOURNALIST

It is important for scientists and journalists to bridge the communication divide that exists between them. In doing so, according to Laura, Francesco, and Jennifer (2010), scientists not only assist the public in making better informed decisions about their research findings, but also reap the benefits of increased funding for their research from various institutions, enhanced career opportunities and improving the chances for further scientific breakthroughs across the numerous disciplines. Scientists who may have already

had an experience working with a journalist covering their research could give testimonials on this fact. In the professional communications realm, it is frequent that individuals have had favorable and not so favorable experiences with the media. With scientists, it tends to be the latter for several reasons.

First, because research often has many detailed nuances and the media don't have the time or the space to cover all of those points. The length of the average evening news story is 70 seconds. Print stories can range anywhere from 100 word briefs to 1000 word articles, with the latter becoming more and more scarce. Therefore, the format of much of today's news coverage simply doesn't allow for detailed reporting. Second, it can be difficult for scientists and journalists to communicate with each other because often they speak in terms the other doesn't understand. More than ever, journalists must know a little about a lot of things. They typically cover a wide variety of topics on very short deadlines. If a topic is too complex, it will simply be lost in the shuffle of the other hundreds of e-mails, phone calls and information they are inundated with on a daily basis. These issues, coupled with the general public's (the media's readers/viewers/listeners) very limited understanding of basic science, can make it extremely difficult for scientists to get their points across in the media. In fact, a 1997 National Science Foundation study found that half the American public doesn't know that it takes a year for the Earth to rotate around the sun (Hartz and Chappell, 1997). If Americans have difficulty recalling this simple fact, why would we expect them to understand the complexities of scientific research and its latest discoveries?

3.1. The Way Forward for Journalists to Overcome the Complexities of Science Reporting?

Should scientists take time out of their day to work with journalists? The answer is simple. Clear communication and greater awareness of your work can equal additional funding, enhanced career advancement and further scientific breakthroughs. According to Laura, Francesco, Jennifer, (2010), medical articles reported in The New England Journal of Medicine and then reported in The New York Times receive about 73 percent more citations in medical reports than articles not reported in The New York Times. If a researcher is able to successfully communicate his or her points in The New York Times or any other media outlet, chances are he or she also will be able to more clearly communicate the value and necessity of his or her work in a grant application. The clearest and most succinct grant applications are usually the most compelling. If a scientist can pitch his or her grant proposal in three minutes or less, it has a better chance at being funded (Laura, et al., 2010). The same is true with the media. If you can communicate three or fewer compelling points about the results of your study, you are more likely to receive accurate and favorable coverage from journalists and the resulting greater awareness of your work. Enhanced career opportunities also are a benefit to working with the media. Scientists who have good communications skills have a distinct advantage over their less communicative colleagues when they compete for prized positions. In addition, those scientists who are cited more and have greater "awareness" - not just about their research, but also about themselves in their fields - are more recognizable in their scientific community, and are likely to be sought after. Finally, let's not overlook the fact that well-written articles that are picked up by the press help stimulate the "cross-fertilization" of research and ideas across broad disciplines, therefore improving the chances for even greater scientific breakthroughs. As such the following are the tips for working with the Media that researchers should keep in mind when working with journalists for effective research impact.

3.1.1. Tips for working with the Media

Researchers should ask for help from the public affairs or media specialists within their organizations. They are accustomed to working with the media on a regular basis and can help best prepare you for maximizing the media opportunity. Here are a few more tips:

- Know who you are dealing with: Many general consumer newsrooms are shrinking at a rapid pace and today's reporters are tasked with more responsibilities and fewer resources. Therefore, there is less time to interview credible professionals and fact check - leaving greater potential for reporters and editors to get things wrong. Also, know that reporters are looking for stories and information that their readers, viewers, or listeners will find interesting. So it is vital that you can quickly explain the results of your research and put it into context about its relevance. Researchers must always be able to demonstrate and explain why the information is new and exciting, and compelling enough for a journalist to want to share that information with hundreds of thousands of the media outlets audiences dispersed within the coverage area.
- Communicate simply and clearly. To have your work covered by the media, it is important to start with a well-written executive summary-style document, which outlines the key points of the research findings. For instance, be sure to organize content to make

it easy to understand with informative headings and subheadings, bold and italicize terms when appropriate, and use “plain language” such as writing in short, clear sentences with common, every day words, rather than industry jargon (Laura, et al.,2010).

- Build relationships. Peer-reviewed, published articles have added credibility that journalists like, but they are not the only way to generate media interest and coverage. And, even if an article is published in a trade journal, there is a chance a mass-media journalist may miss it. Ask your public affairs or media specialists to help communicate your published work to journalists to educate the public about it. They can be of help to the researcher by generating news releases and other announcements about his or her work and distribution of the information to the right people in the media. Also, be sure to get to know key reporters covering your field in the local and national media. Often times these people can be found attending major conferences and meetings. Introduce yourself. Briefly explain what you are working on and why it is important. Ask what the reporter is working on and see if you can be a resource to him or her. Remember, most consumer reporters are often on very tight deadlines and must find expert resources for their stories quickly (Broderick, 2009).

- Set an embargo: The most important way to make your findings as a researcher newsworthy to reporters is to make sure it’s new. Once findings are published online, its news value declines hour by hour. The way to combat this is to make sure that the researcher (or researchers’ press officer, either at your institution or at the journal publishing research findings) share a draft with reporters, along with a lay summary of its contents, on the condition that they do not publish any stories on it before a prearranged date. This period is known as an embargo, and often applies for a few days or weeks before the findings are published in a journal. This ensures that reporters have the time to produce a story that will remain unpublished until findings are officially out.

- Find your hook: Even with a perfectly timed publication date, you need to convey the newsworthiness of your research findings through a press release. To do this, the press release should use one or two angles — or ‘hooks’ — that appeal to news values. Common hooks for science news include:

- Broad impact: does what the researchers found affect a large segment of the population?
- Currency: does the research findings connect to issues that are already in the spotlight?
- Injustice: does the findings highlight ethnic, socio-economic or other inequalities?
- Irony: are the findings unexpected?
- Controversy: are the findings likely to elicit a backlash from special-interest groups?
- Local: are the findings especially relevant to a particular geographical area?

- Involve partners: Are there people or organizations other than your co-authors who should be part of communicating the research findings? This could be a community group that’s directly affected by what the researchers are studying, a government or industry leader who wants to endorse study’s findings and communicate them to their peers, or a non-governmental organization with expertise in the policy implications of your research. Bringing stakeholders into communications of findings can give research findings context and human interest, and it can illuminate solutions.

- Prevent misrepresentations: Some scientists are wary of seeking press attention, fearing their findings might be exaggerated, sensationalized or otherwise misrepresented. This is a legitimate concern, particularly in health research. For example, news articles sometimes overhype biomedical studies conducted on animal models and cultured cells.

- Make your plan: Because these steps usually involve multiple parties; authors, journals, press officers and partners, researchers should write down a communications plan. A thorough communications plan should walk the researchers through the preparation, messaging and distribution of the press release and any other materials.

4. CONCLUSION

Science stories have to be interesting, easy to read and must meet the same standards like all others. There should be no favours in any type of science reporting. The basics including the five Ws and H - What, Who, Where, When, Why and How - have to be appropriately included. Each word, sentence and paragraph must earn its place. Thus the need for short and clear sentences. Stories should have a clear message or make a point come out clearer. Remember media consumers are not only the well-read people, some have basic education that can only aid them in understanding the basics of your researcher. Try to be simpler to these group. Avoid technical jargons or terminologies. Know your audience or target. Give local examples even if it means appropriately using a

common local word to improve clarity. Unlike a decade ago and with the era of Internet, those journalists who wait to do feature stories will soon be extinct. The trend is to have news stories with full background thus providing the 'whole' story and leaving the readers or audience satisfied. Having a personal resource center is a must for science journalists.

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