

## Science, journalism and media\*

A workshop on science, journalism and the media held recently brought together scientists and journalists interested in science communication. The workshop was held as a series of panel discussions that tackled expectations from different stakeholders involved in communicating science to the public.

The first session highlighted the expectations of scientists from science journalists. The panel of scientists cited that the reason there is a common ground between scientists and journalists is that both are after the truth, and what is of interest to both groups is the accuracy and newsworthiness of the information. The panel also felt that despite a common ground, there is a trust deficit between scientists and journalists that needs to be bridged. The trust deficit arises from scientists often complaining of sub-optimal reporting by journalists and the journalists requesting for no interference by scientists when it comes to their reporting. The scientists also felt that the personal dimension was missing in science journalism and journalists should bring in more of human elements while reporting a scientist's work.

The second session tackled the issue of balance versus accuracy. While balance is required to present both sides of the story, the panel cautioned that the concept of false balance can enter journalism at times. It also cautioned that in the age of instant gratification, journalists must not fall into the trap of social media, where accuracy might suffer. Since all news is not breaking news, balance and accuracy can be ensured by providing sufficient time for reporting and allowing science journalism to follow the self-correcting mechanism that science follows. Citing that peer review is far from perfect, the question on whether science journalists should refrain from reporting anything posted on preprint repositories was also raised.

The third session was titled 'Ancient Indian aviation technology: pseudoscience in the media and from the government'. It highlighted that an important distinction between empirical science and pseudoscience is the presence of a testable hypothesis (falsifiability of a theory) in the former. However, the panel also felt the need for a definition of falsifiability that common people could apply to identify pseudoscience. Journalists can help in tackling pseudoscience by highlighting good science. The panel also recommended that the science academies should come together to tackle pseudoscience. The government could also aid in this initiative by setting up a website to highlight all ancient Indian achievements.

The fourth session on women and minorities in science witnessed the panel raise questions as to whether discrimination is a problem of science or society. While the panel acknowledged that there are sufficient women in science to talk about, in terms of popular science communication, there still exist unconscious, subconscious and overt biases against women in academia and science in the decision-making process in India. While this can be countered by affirmative actions for bringing in the minorities, such actions should not result in a quota system that may end up doing more harm than good in the long run. The issues of visibility, voice, mentorship and networking opportunities were also raised. The panel also discussed the structural problems that women face in terms of women-friendly workspaces.

The fifth and last session on the first day included perspectives from institutions and policy-makers. The panel highlighted that institutions like that Indian Academy of Sciences (IASc), Bengaluru offer science writing fellowships and internships to encourage science communication. IASc is also seriously engaging with the scientific community and society at large through its outreach activities. The panel also stated that in case of public-funded research, the public should understand the importance and potential implications of the research project. Hence, science communication becomes important to organizations con-

ducting research funded by the public. It was recommended that science communication should also ask what the society wants and help translate these into a Government policy apart from communicating the policy and the reasons for doing the same to the public at large. The panel also recommended that scientists should contribute substantially towards science communication. It was suggested that every scientist can publish his/her findings three times – for his/her own narrowly specialized community, for a technical and broader community, and in newspapers for the public. This can be achieved by increasing the number of scientists and reducing the per capita quantum of output, so that more time is available for scientists to reflect, synthesize, make cross-connections and communicate. This step would in turn aid in improving the quality of science.

The first session on the second day of the workshop highlighted the expectations of science journalists from the scientists. The journalist community felt that there is still a trust deficit between scientists and journalists, and hence urged the scientific community to engage more with journalists and learn how the newsroom functions. They also felt the need for scientists to discuss what journalists are writing about and acknowledge good writing. They appealed to the scientists to move out of their labs to the land, as much research is still required on soil and water that mainly concern the farmers. The suggestions from the journalists were to come up with a formal list of scientists whom they could contact for quotes and views on a paper. Journalists also urged the scientists to utilize the period between acceptance of a paper and final publication for outreach.

The session on communicating science in Indian languages saw science communicators from various regional languages present their problems in communicating science. When science communication has to compete with other entertainment, it is at a disadvantage. Scientists use language that is precise, without emotion and devoid of hyperboles and superlatives, which is in contrast to the language of media. A call from a journalist is highly intimidating for a scientist and

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vice versa. Such problems are only amplified in the case of regional languages. Also, in some regional languages, with the advent of television and social media, the print media focuses only on communicating the wondrous part of science.

Another challenge for science communication is the sheer volume of pseudo-science reaching the regional populations through social media. A large population of the next generation that needs to think, rationalize, speak, form opinions and make decisions depends on local languages to access information from the internet. The regional science communicators felt the need for information in regional languages to be made available on the internet.

The next session dealt with tackling stereotypes about scientists and journalists. The panel presented findings from several studies on stereotyping with recommendations that the media should focus on scientists as people with failures and successes. The panel further delved deep into how stereotypes are created and how they can be destroyed. The two elements of cognition – coming to conclusions quickly and eliminating a big part of reality, in combination, create stereotypes. The way to overcome this is by repeatedly representing scientists as

normal human beings with science as being inter-subjective and fallible. The panel further indicated that the process of doing science is lacking, be it in media or popular representations of science. Students who enter into a PhD programme are not actually prepared for the hard work involved. Proper portrayal of research student and work involved will ensure that students are prepared for the same while going through the process. The panel also highlighted stereotypes of scientists being seen as experts, of the kind of information that media provides and of scientists who move into science communication.

The session on ‘Science as storytelling: science, media and the public’ discussed about why science needs storytelling. Science needs storytelling and a right narrative so that people can relate to it. This does not imply that science should be written like fiction. Instead it requires using the tools of fiction to write the story. Another aspect normally not talked about is the use of language, which is equally important in science writing. The panel also felt the need to bring in the public who are normally missing from the stories. For example, the stories can include the viewpoints of people living in the area/those being infected by a disease, etc. In addition to

writing, the panel also felt that importance needs to be given to science talks. Diverse forms of science communication such as writing, talks, folk music, etc. which are culturally rooted, are required.

The two-day workshop ended with a session on opportunities in science and science journalism which provided the panel’s take on where the jobs, students and teachers were. The panel felt that students are available everywhere and there is a willingness to learn as well. However, good courses in journalism are limited in capacity and most students end up learning on the job. Moreover, if people want to take up science communication there are not enough full-time jobs in the market as yet. The panel also felt that new facets of communication like the social media are opening up jobs, where one can master the technology and use it to reach out to people. This potential needs to be tapped by making a shift in the way we work. The panel also felt the need for journalism schools to distinguish between science journalism and other types of journalism, and train teachers to adopt newer facets of communication.

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