Special Laws in Know-Mans Land Between Science and Journalism?

Report from a Stockholm workshop

The boundary effect is a condition of altered friction and turbulence which occurs in the region where the atmosphere meets the ground. The workshop "Boundary Effect: What happens in the meeting between scientists and journalists" held in Stockholm on Nov 9 2005, explored whether there might be an analogous set of rules that only apply at the interface of science and journalism. If so, how do conditions in this "know-man's-land" affect science, the media and ultimately society as a whole?

The workshop was organised by the British Council, the Swedish Museum of Natural History and the association Public & Science (Vetenskap & Allmänhet).
The objective was to explore – during one intense day – interactions between mixed groups of students specialising in science journalism at the universities of Stockholm and Uppsala, and various postgraduates or postdoctoral researchers in natural sciences, altogether some 100 participants.

Science Journalism and the Future Media Landscape

After opening remarks, the workshop started with two keynote lectures. The first speaker was Ulrika Engström, science reporter for the "The Knowledge Channel", a collaborative venture of Sweden's public broadcasting service SVT and the educational channel UR. Three quarters of the population with TV sets have access to thes channel, but only 37 percent are aware of this fact.

– New technology is cutting the cost of starting TV channels which are emerging at a rapid rate. In this rich market, science journalism is also vying for space in the public arena.
TV means more channels with a greater volume and variety of output, she said, mentioning Discovery, National Geographic and Animal Planet among others.

– I miss the fact that science is not more visible in public life. This contributes to scientific illiteracy on the part of the general population, which is a problem, given the enormous influence of science in today's society. And yet, people are required to make scientific decisions. So there is a need for more communication and arenas where different involved parties can meet. Science journalism must be fun, but I don't want to create a teacher-student relationship. It is important not to be seduced by the medium.

Media Must be Loyal to Lay Public
– My desire is to lead the scientists out into the arena in order to put things in context and to put things into a wider perspective, posing questions which the scientists won't ask. Knowledge without context means nothing. And that is the role of journalism, not just to summarize, but to contextualize.

Engström thought that it was possible to popularize science to the level of small children's books without losing the essentials. After all, she said, our view of reality is a simplification altogether. It is just a question of deciding which level to stay on.

The loyalty of the science journalist must rest with the viewers, not the employers or the scientists. It is also very important to be critical of sources, and check where a finding was published, what other scientists think of it and how it benefits the common man or woman – that's where the story lies.

Journalists Megaphones for Science
As an example of journalistic omissions, Engström mentioned that Swedish research in the humanities did not even merit a mention in a recent global ranking by the New York Times of universities. Why hadn't any of the science journalists ever written about that before? And why hadn't any humanistic researchers blown the whistle earlier in the press? Perhaps because they did not want to bite the hand that feeds them. That is why we need independent critical science journalists, who can criticize things without destroying their careers, summarized Engström.

In comparing scientists as sources, she preferred to contact researchers in the USA rather than in Sweden. They are more visionary and better able to explain what they are doing. Swedish scientists stick to their scientific jargon instead of explaining something in simple language. Moreover, Swedish researchers are inaccessible. It is easier to get hold of a Nobel Prize winner in Texas than a PhD student at some Swedish university. Finally, Engström said she wished Swedish scientists would stop being so cautious and dare to explain their work at different abstraction levels and also speculate on the consequences of their findings. Otherwise, we have a democratic problem, she concluded.

Why Science and Need Science Journalism

The next speaker was Dr Jenny Gristock, Science Journalism Lecturer, City University, London, also Research Fellow, SPRU Science and Technology Policy Research.
– Students of science, and science communication, will know that popular science can be lively, interesting and fun. But how many know that science journalism is crucial to the success of science itself? Dr Gristock opened.

Where scientific theories emerge from technological advance (as opposed to vice-versa), new knowledge has to be communicated and created via popular channels, as the appropriate disciplinary systems of mediation have yet to exist. Hence, popular channels are favoured where scientific work:

- ushers in a new paradigm for understanding the world (e.g. Charles Darwin's 'Origin of Species');
- emerges from technological advance (e.g. Carnot's 'Réflexions') rather than disciplinary study; or
- involves issues that are contentious, perhaps because they affect those who are socially excluded from science. Marie Stopes, the British scientist and birth-control campaigner, could not publish

in scholarly journals but used the popular press to advocate i.a. creating clinics dealing with women's health and contraception.

Science Journalist helps science

Therefore, science journalism helps science in several ways, by:

- strengthening communications between scientists in new fields
- encouraging scientists to concentrate on social issues
- furthering technology-led development in advance of scientific theory
- creating scientific theory
- communicating paradigm-changing work, and
- communicating contentious issues
- bringing science to government or other non-scientific communities

Jenny Gristock suggested that innovation is about much more than wealth creation, and secondly, that the role of the mass media has been underplayed. National capacities in science journalism and media channels have the potential to influence a nation's capacity to innovate. Thus, science journalism serves multiple roles, not solely as 'educator' of the public. Science journalism 'educates' scientists too.

Science journalism can also influence the potential to reach Barcelona targets, communicate the joy of science and technology, and the strength of science in certain institutions and countries, Gristock continued.
Quoting senior science editor Tim Radford of the Guardian, Gristock said science journalism "is a filter through which debate happens". Debate is very important in science. In negotiating different ways of understand the world, different "truths", science journalism can help different communities create meaning from both the science and the local context and record these.

Eight Sets of Question Discussed
Following the lectures, four groups of science and media students convened to discuss eight sets of questions, selected and formulated by the organisers through a process of prior preparatory expert hearings.

Each group met in three round-table sessions with assigned questions to be discussed during three sessions, two with pre-determined topics and one with a topic chosen by the group. The discussions are summarized in the following.

The Image of Scientists and Journalists

The consensus was fairly strong regarding the image of a typical scientist. Voices quite unanimously portrayed the scientist as a socially disabled, narrow-minded eccentric who nevertheless is held in extremely high regard by society. One researcher said this might be compounded by our image of the natural sciences as being a particularly male-dominated arena. The image of the journalist was slightly more nuanced, being twofold. The more negative stereotype of the tabloid hack, and the other, the genuine, serious upmarket journalist.

Scientists are often resistant to approaching journalists. One of the researchers professed not knowing how to go about it. Generally, they fear that any overtures will be perceived as lobbying for personal PR. One astronomer feared from her own experience that such attempts would be misinterpreted and misrepresented. A leading news daily had boldly headlined her an astrologer!

Hacks and Boffins Speak in Different Tongues
Stereotyping is exacerbated by linguistic mayhem. Since scientists and journalists arguably speak different languages, or dialects, they risk talking at cross-purposes. Several of the researchers present felt that journalists may simplify to the extent that the resulting information comes out as being simply factually incorrect.

Importantly, journalists must dare to pose silly questions in their interviews in order to maximize prospects for mutual understanding and minimize the risk of misquotes and misunderstandings. One journalist student felt that journalists who know too much about a subject they are interviewing on may take their audience too much for granted. If they know less, they can pose the more basic questions which are more in line with what the public needs to understand.

However, another media student maintained that background knowledge improves prospects for critical appraisal of the material. The group concluded from this discussion that in-depth subject knowledge is important but should not be flaunted. In this context, it was emphasized that the scientist also be afforded the time to prepare for meeting the journalist in order to be able to describe his/her research intelligibly.

In the encounter between journalist and scientist, the latter also has a great responsibility. The scientist must "make his or her research exciting and vital in a larger context". That task is at least as important as making the material understandable. The group consensus was that researchers and journalists need to have more personal contact and dialogue in order to understand each other at the interface between their respective worlds.

Should the Media Review Science?

This discussion centered on the potential dangers in scientists and journalists establishing close ties. Journalism would become more partisan, resulting in a slanted view. Personal relations might paradoxically also put undue pressures on reporters to assess researchers more negatively than necessary.

Scientists are constantly being subjected to critical assessment by colleagues through the so called peer review system. The group agreed unanimously that media scrutiny of science was also natural and essential. Such reviewing may take place on different levels. Journalists cannot be expected to judge the facts in the same way as scientists do, since they lack detailed knowledge.

Journalists Should Understand Scientific Methodology
Several group members felt that science journalists, in lieu of having detailed factual knowledge, instead should have a grasp of methodology and understand how the science community functions. The scrutinizing role of media should take place on a different level from that of scientific peers. It is more a question of placing research in a societal perspective, answering questions such as: "What do we get

back from the funds invested?" and "Is this the right kind of research we should be funding?". Following up on research efforts is something journalists should do more of in the future.

"It is important to understand that cutting-edge science is contentious. We scientists often don't see eye-to-eye", said one of the researchers. Conflicts are natural in science, he maintained. Yet, frequently, a single scientist will be presented in the media as representing all scientists. Journalists should, it was suggested, to a greater extent seek comments from several scientists to assess an issue more accurately.

Currently, scientists enjoy a very high level of credibility, and more public insight might lessen public trust, some felt. Most group members did not agree with this view, however, saying that more transparency in science would afford the public better prospects to question, have a say and take a stand on various issues.

Quality and credibility of science were not seen as being necessarily dependent on one another. One scientist's view was that it is more important for science to be of high quality than to enjoy a high level of confidence. Another view was that science should be able to inspire credibility and trust, even though it might not always be of the highest quality. This would require closer scrutiny by the public so that people understood more of the nuances involved and stopped making blanket judgments about all forms of science.

Science in the Media in the Future

New media applications such as "blogs" put increasing demands on both scientists and the public, group members agreed. The Internet was viewed as complementing newspapers, not replacing them, making it easier for the public to contact scientists directly, e.g. via e-mail. The result may be an increasing discussion between the research world and the general public.

The new media technologies also improve the public's opportunity of seeking out information themselves, which entails a risk since it is must critically assess the veracity of sources. Medical websites offer opportunities for self-diagnosis, a potentially life-threatening service in the absence of the prerequisite in-depth knowledge to evaluate the information. Here, the science journalist could assume an important role as a "filter" between science and the public.

In addition, information overload increases the risk of desensitization to vital information and overall exacerbates the need for citizens to be able to select and evaluate trustworthy and relevant information. Similarly, this information glut raises the demands on information-givers for clarity. "Today, it is easy to get on TV but harder to make an impact", as one of the journalists said. He also stressed the importance of personal contact between scientists and journalists, as it reduces the risk of misunderstanding and promotes transparency.

"More and more articles are published on the Internet without having first been peer-reviewed", a scientist said. This might affect quality negatively, he felt. But several advantages were also mentioned, e.g. more rapid dissemination of results, fostering a livelier debate. The trend of research being published first on the Net was predicted to increase. When the public can partake of research results directly via the Net, the journalist role must change. The focus will tend more towards collecting, evaluating and filtering out the information that matters. "You end up on the channel you believe in", as one scientist

put it. In order not to have to personally assess all the available information, the media consumer selects a channel s/he trusts and lets it do the evaluating. This is convenient for the user but also gives the chosen medium a lot of power.

Will the Net Widen the Digital Divide?
Another group discussing the same topic saw dangers in that as the world gets increasingly more digitalized, only a well-educated elite, people with the time and the competence to sift through and utilize the constant tide of information, will have the time and opportunity of accessing news.

Given all the new sources of knowledge the Internet has provided, do we still need popular science journalism? The question prompted a long discussion with opinions divided as to whether Net encyclopaedias like Wikipedia – to which anyone can contribute – would increase or decrease the digital divide.

The group was far more unanimous concerning blogs, which no one considered to be very good sources of knowledge, as well as being extremely boring to read. Operating against this background of intense media noise, the future role of the journalist will be very important in sifting through the maelstrom of raw news and selecting items to highlight and present to the common man and woman.

Inform, Engage or Entertain?

Information can be linked to involvement as, for example, in the Swedish TV program "Faddergalan", a gala show promoting foster parenting. Here, the desire for learning is not paramount but is used as a way of engaging viewers. Clearly, the communication industries prioritize interest and identification higher than does the science community.

Natural science must assume a more prominent role in what is considered common knowledge than is the case today. A science communication student liked the expression 'edutainment' which combines both education and entertainment.
There appears to be a gap in understanding in the borderland between scientists and journalists. The science world is not really considered to be part of the "real" world. Scientists are often portrayed by the media as all-knowing experts.

In debate programs of all kinds, scientists are pitted against each other as adversaries, which certainly may attract viewers. There is little merit in a program where everyone agrees around a lukewarm consensus. But the group felt that there was at times an exaggerated faith in scientists. "Science must be brought to the public and cease to be so status-oriented; only then can it rouse the interest of the public for research".
One scientist said it is important to highlight phenomena that are truly important to society. Why do we have special TV news programs on economics but not on ecology?

A Spectacular Breakthrough in a Dull Field

The discussion mainly circled around how scientists outside the group of frequently contacted and quoted group of researchers might still communicate their results to the public. Often, research issues only become salient in connection with a disaster or scare of some kind. All group members concurred that unwarranted public fear and concern in conjunction with the publicizing of some research news might be mitigated by maintaining a more continuous flow of research information. In order to achieve this, however, even research results which are not of immediate, obvious news value should be presented to the public.

But whose responsibility is it to disseminate results which don't belong to the spectacular category? The journalists in the group felt it was up to the scientists to do so, a responsibility in line with the state-given duty of academia to present their results to the public, in Sweden known as the "third task" (research and training being the first two).

Opinions Divided on Responsibilities

The sole scientist in the group maintained on the contrary that the responsibility lay with the journalists. Scientists are not inclined to devote time to activities which take resources from their own research. In addition, research posts do not provide time for such activities and moreover, public dissemination of research results is not rewarded. Hence, scientists simply will not do it. Currently, it is only those scientists who have something to gain from actively presenting their results to the public, or who have a genuine interest in doing so, who actually are at work popularizing their findings, he declared.

The rest of the group considered it impossible for journalists to keep track of all the research going on in different places. The onus to disseminate must of necessity lie with the science community. After all, the scientists are the ones who have the knowledge to be communicated.

If scientists are to really put some effort into the third task, time and funding must be made available to them for this during regular working hours. Another obstacle: communication channels between scientists and journalists are too few and hard to access. Those researchers who might want to communicate what they are doing have trouble finding someone to turn to while journalists are often able to contact an information department or homepage to find a researcher.

Do Scientists Distrust Journalists?

Other issues discussed included frequent distrust on the part of scientists as to how journalists present research. The former are wary of being misunderstood and misinterpreted. Many scientists also fear disapproval from their peers.

Nevertheless, the group felt that good, serious journalists have great opportunities to disseminate research results. They can make research accessible and contextualized, often in a much better way that the scientists can do themselves.

Scientists and journalists might gain a better understanding of each other if they worked at each other's workplaces for short periods. Another proposal was for journalists to attempt to a greater extent to contact other researchers than they habitually contacted to allow "new faces" to present their research.

It might also be beneficial for promoting an understanding among the public to interview PhD students instead of professors, as they might find it easier to explain things on the appropriate level for the target group in question. Another idea was for each unit or larger department to have an assigned person with the specific task of presenting the research there.

To Know Everything or to Know Enough

All group participants agreed that, indeed, it is possible to simplify and popularize without being inaccurate or incorrect. To simplify is simply to repackage information in another format. One scientist felt, however, that "there is a risk of people becoming duller" if we simplify things too much. Human beings thirst for knowledge and we should not despise knowledge or the ability of people to absorb it.

But after all, adapting your message to your target audience is a tradition in the research community. Scientists may think it naive if one tries to "translate" their message to another conceptual level but sometimes this is inevitable if one is to be able to reach out at all.

Does Simple Mean Wrong?
Scientists may not be the best people to explain their own research, even though most of them will probably want to maintain that privilege, out of fear at having their message distorted otherwise. Another group discussing the same topic, detected quite often scientific errors in the media. There were also cases where the reporter had made a conscious simplification, which an expert would interpret as a lack of knowledge.

A journalism student said that there may be a way of circumventing these words and that the important thing is that the reader understands what the journalist means.
To the scientist, said a scientist, a simplification can feel like a lie, because you are withholding part of the truth.

The conversation came to centre a lot around words, their use and the misunderstandings that can arise. A physicist saw a problem in that specialised English terms do not always have a Swedish equivalent. The absence of corresponding standardised Swedish terms means that different scientists translate English terms differently.

Inaccuracy More or Less Serious
Both scientists and journalists should check facts and be critical of sources. A science communication student and former scientist felt that the scientist would sooner look for facts in the scientific literature, whereas the reporter prefers to call around.

Journalists may find it hard to accept that for natural science, the concept of "truth" changes over time as new research findings are brought to light. By no means are errors in science reporting always attributable to the reporters. Commercial interests on the part of the scientists and aspects of science policy loom increasingly larger. "Always check the affiliation".

Several international comparisons have left Sweden quite far down on various ranking lists of prominent research. One reason why Sweden ranked so poorly might be that Swedish scientists do not quote each

other very much. This could in turn be interpreted that we are less burdened by corruption than other countries.

Purpose and Public for Science Journalism

Participants agreed that research is important and influences society in general. Hence, science journalism fulfils an important role from a democratic perspective. Original scientific publications are not primarily intended towards a wider audience. A great part of the aim of these publications is to create an opportunity to check for accuracy. Journalism, on the other hand, is a question of unearthing various planes in science and acting as an interpreter.

One participant said that the role of the scientist was to disseminate the current world view.
This prompted a discussion of whether or not journalists should always counter arguments from various sources. There are, for example, a number of organisations with an alternative worldview, in opposition to science. Several participants were of the opinion that engaging in discussion with them would give them more recognition and publicity than they deserve. However, the outcome of the discussion was that it is never a good idea to stonewall. Misleading statements should never be left without a response. Then it is up to every individual to judge for themselves the relative merits of the arguments.

Science News Different from other News?

The discussion used as point of departure the story of what happened when a French scientist and his research crew studied the fauna and flora of Madagascar, The project was documented by a film team. The research team consisted of several excellent researchers from all over the world. Yet, the film crew only highlighted a few of these, notably, those who were already familiar to the general public or were doing something spectacular. Why did they do that? The choice should be determined by the research quality and scientific knowledge.

The science communication students were all of the opinion that the loyalty of the journalist should be to the public. Scientists and journalists have different opinions of what is news and who is of interest to interview. Unless there is a public interest in a research subject or an individual, it matters little how excellent the research is or how clever the scientist. The journalist will select people to talk to based partly on who might interest the public and on the basis of their high credibility. This is why charismatic and well-known people tend to be interviewed again and again.

There also exists a distrust of the media, and the scientists are concerned that journalists will misunderstand and misconstrue their work. Another reason why scientists do not of their own accord try to get media attention is that many feel they are selling themselves, and this is not viewed favourably in the science community. In summary, scientists adopt an ambivalent attitude to the media. On the one hand, they like to see research published and given attention, on the other they do not want to be the ones to get in touch with reporters to publicize their findings,

The group considered it a good idea for scientists to undergo media training. Discussions and meetings between journalists and scientists may create greater understanding and improve relations. The scientists in the group also pointed to the hierarchies in academia as obstacles in dealing with the media. As a PhD

student or post-doc, you are usually controlled by the professor or the group leader and you do not dare to make independent statements about your research.

The Journalist as Entertainer

Topics like climate change and stem cells are viewed very differently in the US and the UK. "Journalists like to entertain and engage", and the news value is the most important factor when it comes to selecting a topic to report on. The news value may vary depending on for example target group. Topics with a local angle are important. Both the topic and the angle depend on the target group and the political affiliation of the newspaper.

A Scottish researcher raised the issue of whether the media, and particular the evening tabloids, really should publish such large headlines about, for example, research on certain disease. Frequently, they are not well-founded and they may scare people unnecessarily.
Jenny Gristock countered that it was always better to publish on a topic and trust in the public debate to gradually result in a more complete and accurate picture. Mad cow disease was an example in point, where the media blew the whistle.

Journalists Should "Show a Little Leg"

Some of the science communication students said that it is not the role of the journalist to educate but to entertain and to capture the interest of the public. If at the same time one can teach them a thing or two, this is of course a good thing, but it is not the primary objective. Jenny Gristock also declared that science journalists might well be a bit more challenging and present the most exciting aspects, "show a little leg", in order to get the message across.

Some of the scientists pointed out that it is also a democratic issue that the general public has the right to be informed about topics they are expected to have an opinion about. Another problem is that concepts mean different things to scientists and the general public. One of the researchers was upset that journalists could write that evolution was simply a theory.

Should a good science journalist have a science background? If you have a different perspective, you may find it easier to convey information of relevance to the public. In addition, it is up to not only journalists and the public to improve their understanding of and knowledge about science and research conditions. Researchers, too, should gain a better understanding of how the media operates and the public thinks. This will help them to get their messages across better.

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