

Why journalists report science as they do

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Among scientists, especially natural scientists, in Europe and North America, it is not uncommon to feel that the reporting of science in the news media is inadequate in several respects. Among the points frequently mentioned are:

- non- or underreporting of important scientific progress,
- sensationalism and negativity in choice of science topics,
- sensationalism and negativity in wording and in presentation,
- inaccurate reporting,
- reluctance to publish rejoinders and corrections.

Many scientists claim that the media do not fully appreciate the inherent importance and interest of science, particularly basic science, that journalists often have too little scientific education, and that, in the end, they tend to obstruct rather than to facilitate communication between scientists and the public. The view is that the social responsibility to inform and educate the public can only be accomplished through a close and intimate, but so far lacking, co-operation between scientists and journalists.

If these scientists have analysed the situation correctly, news journalists seem not to have a constructive and rational view of science and tend not to understand what the public really needs or wants to read, listen to and watch.

Is this a reasonable assessment of today's science journalism in the Western world? I am inclined to answer "No". The bottom line is rather that scientists and news journalists, as members of two different social institutions, have different professional roles and information functions. Therefore, the solution to the perceived

problems is not, in my view, an amalgamation of the two professional roles in an intimate collaboration. Rather, let us review the informational responsibilities of scientists and journalists.

In the professional role of a scientist, the production and dissemination of information is a central aspect. A piece of research is not completed until a report is published. However, this refers mainly to communication within the scientific community, and most scientists are satisfied to get their work published in scholarly publications. Information activities directed to the general public would take a lot of time and effort and are generally not seen as particularly rewarding, neither as an activity in itself, nor as furthering the scientist's academic career. On the contrary, being successful in popular science may even be detrimental to a scientist's career because it may be construed as exhibiting shallowness and as being a poor substitute for success in scholarly publications.

THE SCIENCE LOBBY

However, there is a minority of scientists who really are interested in a special aspect of outwardly-directed information: the science lobby. This loosely defined group of persons is made up of scientists who have accepted administrative or representative tasks: vice chancellors, deans, department chairs, members and leaders of academies and other scientific societies, scientists and scientifically trained personnel at research councils and other funding bodies, information officers at scientific institutions of various kinds, and to some extent politicians and civil servants in ministries and agencies administering science.

A sociologically oriented definition of the science lobby would be that it is comprised of persons interested in and working for:

- more money to science,
- within-science control of the money,
- within-science control of choice of projects, methods and procedures,
- not more demands from society than can be met with reasonable success.

This group of people is interested in using the media to further these goals. However, they do not usually refer to such activities as lobbying but tend to say that they want

to be useful to society, to help disseminate knowledge that is beneficial to human well-being and the democratic process, and to make a cultural contribution.

Most certainly, science information can fulfil these three or four last-mentioned very important tasks, but for the science lobby they are not in themselves the main outcome in the short run. I would venture to state that is naïve to believe that there is no active science lobby working for more money and more control. And it would be naïve in two respects: first because it would be a distortion of the actual situation, and second because it presupposes that it would be in some sense illegitimate for a social institution and its representatives to lobby for resources or influence. But on the contrary, it is a fundamental democratic right to voice one's priorities, to argue for money and control, and to be taken seriously in doing this. But for many persons in the academic community notions such as advertising, public relations and lobbying are not approved of, yes, even seen as of less moral value than scientific activities. Many scientists tend not to see themselves as another interest group among many — some even regard science as ideology-free — but claim the privilege of having special access to knowing what is true and good and what is not. However, no such privilege is recognised by the media practitioners, who look at all social groups as having interests.

This latter view seems more realistic to me and most others who do research into science as a social system. All holders of power, all sources of information, including scientists, have their own purposes for offering information to the media. These purposes may well be charitable and well-meaning, but an overriding goal is to further the ideas and the good reputation of one's own organisation. As a result, favourable publicity is expected or, at least, hoped for from contacts with media people. Politicians, corporate heads, union leaders, artists, athletes, and so on are all advocates in their own causes. Everyone with an interest — and who hasn't got one? — tries to champion this interest, and this is quite acceptable and perfectly moral in itself.

When the science lobby examines the media, it finds that the media do not live up to its expectations. The media do not publish all press releases as they come in, but chose rather odd or controversial research projects to write about and describe them in negative and sensational terms. Newspapers and television are fraught with

factual errors and errors of emphasis, and they do not refrain from criticising both science as an endeavour and individual scientists. This brings us back to the original problem: bad publicity allegedly due to journalistic standards based on lack of understanding of the scientific process, lack of factual knowledge and a disobliging attitude toward science.

It is, as just stated, quite legitimate to further one's own interests by arguing in public, but for this very reason it is also important for the citizens to be attentive to all who have a cause to advocate. The reason, of course, is that there is always a risk that the particular interest may be placed above the actual state of things or good ethics. Moreover, interests may contradict each other; we cannot all have it our own way all the time. For instance, already as young children we learn that advertisers want us to purchase their goods and services, and a little later we realise that politicians want our votes in general elections. As a result, we become more or less critical and careful in our choices. Still, both commercial advertising and political campaigning are vital and indispensable ingredients of our Western democratic societies.

For some reason, we citizens seem to have less doubt in the innocence and unselfishness of charity organisations or of bishops or, for that matter, of national scientific institutions and distinguished professors of natural science. In spite of this, even these organisations and persons, with their lofty and admirable goals, are upholders of their respective causes and look forward to benign media publicity.

OPERATIONAL RULES AND THE FREEDOM OF EXPRESSION

Journalists do not see it as their task to work for any special interest, whatever its benefits. Their mission in our Western societies is to serve their audience, the citizens, by informing them about recent developments ("news") and by naming and warning of insufficiencies of various kinds. These tasks may be summarised as three C's:

- *chronicle* — to inform about what has happened since the last instance of publication,
- *criticism* — to protect the audience and warn of dangers and inadequacies,
- *commentary* — to explain and interpret what is happening.

Sometimes a fourth C is added, for *communication* – transfer of the social heritage between generations and between ethnic groups or social classes. (Also, *entertainment* may be recognised as a separate media assignment.)

These social tasks are most obvious regarding politics and business. We citizens need information about what is going on in these fields, we need to know if someone in power misbehaves and we need help to understand what is occurring. It is important to stress that news media do *not* see it as their mission to help governments or corporations or universities or charities to build a better world. “Publish and be damned”, the motto of Washington Post, sums it up well.

How applicable are these social tasks of the media regarding science? Most research projects, of the several million concluded each year in the world, are never addressed in the media, and rightly so because they all but lack public interest. And it is the media, not the scientists, which decide what is of interest to the public. When a topic *has* been defined as being of public interest, however, then the C’s are in full force. Scientists are then seen as news generators, power holders, interest mongers, in the same way as corporate leaders, union officials, or statesmen. It is not possible to say “no thanks” to publicity, and the only option is to make the unavoidable publicity as benevolent, or at least as little damaging, as possible.

The societal tasks as mentioned above are not explicitly assigned to individual journalists as they are hired by the media. Rather, this role of the press is a liberal figure of thought from the late 18th century. The assumption is that public openness – publicity critical of the government as well as contradicting ideas competing in “the market of information” – helps improve and develop the society and counteract misuse of power. With the later advent of universal franchise, an enlightened electorate is seen as agents acting upon media reports of, say, corruption among political leaders. To support this so-called watchdog function of the media, substantial legislation to protect press freedom exists in Western societies.

This means that media criticism of individual scientists or certain state of affairs in academic institutions is not based on bad will or inadequate education, but stems from the journalists acting as representatives for the public — at least in principle.

This criticism in the media can be structured in five major categories:

- scientists sometimes create dangerous knowledge and products (e.g., weapons, toxins, radioactive substances, genetic engineering),
- scientists sometimes use methods and procedures that may be unethical or even illegal (e.g., painful experiments on animals, humans as guinea pigs, research on aborted foetuses, integrity-threatening registers of individuals; also accepting financing from questionable partisan organisations, and instances of self-enrichment and downright fraud),
- scientists sometimes waste public funds on meaningless projects,
- scientists sometimes express opposite opinions on important matters, each of them claiming to be right; and on the other hand: dissident scientists are stigmatised by mainstream scientists,
- scientists sometimes withhold and repress information that ought to be made public.

The first points concern how scientists go about their job, the latter ones the way they interact with reporters and other external groups. The items are similar, in principle, to media criticism against other holders of power. When reporting alleged misbehaviour of decision-makers in industry and public administration, other categories having to do with environmental pollution, treatment of employees and unfair appropriation of favours and money to oneself are added.

The task of criticising the establishment is taken seriously by news journalists, leading to a special media interest in scandals and conflicts. For this reason, the picture painted by the media is by no means a mirror image of reality (whatever that is), but a dramatisation of a negative selection of events and situations. And a particular event has a higher news value than others if it is:

- surprising,
- topical,
- consequential,
- critical of people in power,
- about people in conflict or distress,
- offering opportunity for personal identification,

- close geographically or psychologically,
- easy to comprehend,
- entertaining.

These traits are, of course, not very similar to what characterises a regular research report, rather the antithesis. In fact, journalists and scientists look quite differently at what constitutes valuable information:

Scientists

- aim: dissemination of research results, teaching, PR for science.
- slow information dissemination.
- factual orientation.
- rational appeal.
- consensus gives best picture.
- theoretical relevance important.
- comprehensive.
- details important.
- results are qualified.
- work judged by colleagues, thus reinforced and reproduced.

Journalists

- aim: news, enlightenment, exposures, large audience.
- fast dissemination.
- personal orientation.
- emotional appeal.
- diverging voices give best picture.
- practical relevance important.
- selective coverage.
- details unimportant.
- results are overstated.
- work judged by colleagues, thus reinforced and reproduced.

There are also some differences within the media community worth noticing.

Ranking three main characteristics of a piece of information — novelty, accuracy and appeal — three different orders of preference present themselves:

Science

1. New
2. Correct
3. Interesting

News media

1. New
2. Interesting
3. Correct

Magazines

1. Interesting
2. Correct
3. New

The views on how best to produce and distribute information are so different that one could ask if it would not be more practical for scientists to just forget about the media. Not caring about the media is, in fact, a common attitude among not only scientists but quite a few potential news generators, and trying to not be noticed

often turns out to be a successful strategy. However, there are some reasons for this being an inferior way of handling the media:

- the media may unexpectedly put certain scientific or academic events or states on the public agenda; they may also influence perceptions and attitudes in an undesired direction,
- any scientist may be sought out by the media asking questions about his or her research or other professional work: all scientists are potential news generators,
- scientists, especially those working with public funding, are expected to inform the public or certain client groups about their activities and results.

THE BIAS TOWARD NEGATIVE NEWS

And, of course, everything about the media is not rose-coloured. The general tasks of the media, the C's mentioned above, are healthy in theory but not without problems in practice.

The main basis for these problems is that all media want a large audiences. Without an audience the overall mission cannot be fulfilled. But a large audience is also in demand for quite another reason: making money. All media need income to carry their costs. It is even a standard phrase in the media industry that only a profitable newspaper or broadcast station dares to be free in relation to advertisers and government; that is, to be in a position to effectively carry out its watchdog function.

This last tenet is in itself quite valid, but the commercialism is indeed a dilemma. From research in mass communication and social psychology we know that audiences like to hear about conflicts and scandals. Such contents sell newsstand copies and increase viewer ratings. But it may also lead to journalists seeing scandals and conflicts wherever they look.

Thus, what may occur is that the media invoke their social role as critics and use it to deliver criticism against decision-makers to a much larger extent than the role as watchdogs really calls for, the real purpose being to increase circulation and viewer numbers. Thus, there is a commercial value in conflicts and critical reporting, which, in turn, may lead to:

- exaggerated, inaccurate criticisms on the pretext of a making a social contribution,
- personal criticism in the reporting rather than criticisms directed at matters of principle.

This means that individual pieces of villainy may overshadow structural problems and deficiencies in society. There is also another problem related to the media task of being critical and the public demand for scandals and conflicts. If media attention is skewed towards reporting negative rather than positive aspects of governance, of corporate behaviour and of other performance by holders of influence, the resulting publicity may very well render an unrepresentative picture of the world. Taken one by one, these critical stories about prominent persons or organisations taking questionable action are important and for the betterment of society, but seen as a whole they may express an excessively negative world view.

Due to the watchdog function of the press, persons in power who are honest tend to get less media coverage than the more or less shady leaders against whom the critical examination is directed. Naturally, this is both what to expect and what is desirable from a societal point of view. It is the rotten eggs that need to be exposed, not the fresh ones.

However, an unwanted result of this imbalance is that it may contribute to the view that it is not uncommon for politicians (or business or union leaders or, for that matter, scientists) to be crooked, even though these by all probability only constitute a quite small proportion. If such sentiments become widespread among the public, two unwelcome consequences may follow:

- the political system and, in continuation of this, the current practice of democracy may become less legitimate in the eyes of the public,
- it may be more difficult for the public to realise when a power holder has really behaved in such a way that he or she ought to be separated from authority.

This situation is aggravated by a technicality in the way the media are published. The rhythm of publication probably leads to:

- an even more negative picture,

- fast action, which, in turn, may lead to inaccuracies.

Even though there are many exceptions, positive events tend to take a longer time to play out than negative ones. Building a career or a good reputation, or for that matter physical entities such as a bridge, takes years, while they may be destroyed in a minute. And since the news media are published daily, or even more frequently, more negative than positive events occur at about the same temporal rate as media publishing.

The publication rhythm encourages speedy news journalists. They may only have a few hours to collect information and write a story about a subject that the source, for example a scientist, has spent decades working on. If the journalist waits with the publication in order to check facts or collect supplementary information, a competing news medium may get the scoop. No wonder mistakes are made.

SOME FINAL ADMONITIONS

So, is there a solution to these dilemmas in science reporting? The answer is, no, not really, not without censorship — a solution still in use in many countries. In the Western world, we have to accept that the news media both tend towards the negative and critical and will continue to make factual errors of varying magnitude. But there are steps on the way:

- both the general public and potential news generators should be aware of the social tasks and inner workings of the media, explaining why the media do not publish mirror images of reality; thus media studies should be included in the compulsory school curriculum,
- decision-makers and other potential news generators, among them scientists, should not overestimate the negative impact of singular instances of bad news, since these tend not to be very large.

Finally, based on my many years of experience both as a university researcher and as a science editor, please bear with me if I venture to be normative at the end of this overview and give a few pieces of concrete advice to potential news generators, among them scientists:

- do care about the media and work proactively with a number of media-oriented instruments — written news releases, occasional press conferences and press seminars; utilise the knowledge of how the media work, i.e., organise media events such as the public opening of a new laboratory, appearances of celebrities,
- if there is a crisis, do not lie; rather, refrain from commenting,
- if you cannot answer a certain question, say so and ask to return with an answer (and do return),
- be prepared with short and instructive ready-made answers containing your most important points and arguments,
- don't say anything off the record,
- call back as soon as possible any journalist who has tried to reach you,
- and, principally — do not do anything that you wouldn't want to be made public.

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