

Applying Science Ethics to Science Journalism

Marc Dressler* dressler@inspective.de

inspective, Albuchweg 19, 70188 Stuttgart, Germany

ABSTRACT: Following the ethics of science means following the ethics of modern societies. Modern societies base their freedom on reason which is the epitome of science. Replacing superstition and credulousness by rationality science frees men from bondage and intrigues: Enlightened people identify partial decisions that hinder equal freedom. Science journalists join the scientists in this enlightening task by revealing private interests that hamper the realization of the public interest. Because scientists and journalists have their own private interests their revelation requires a mutual control of science and science journalism. While journalists criticize science and scientists criticize the media both strive for the fundamental moral value: objectivity. Thus both share the same moral virtues. The article is based on a presentation given at the ESOF 2008 at Barcelona on the EUSJA's panel on ethics in science journalism.

KEYWORDS: Science Ethics · Ethics of Science Journalism · Public Interest · Common Welfare.

0 Introduction

My general thesis is that the moral values of science are the moral values of a free, democratic society. From this follows that the ethics of science is no professional ethics but is applicable to every Western democracy (Cf. Polanyi (1962) p.54; Gatzemeier (1994) p.15; Muir (2008) p.40; against Lenk (1992) p.19; Bayertz (1994) p.45). A successful application of science ethics to science journalism should confirm this thesis at least in part. For this I will show that scientists and journalists agree in their interests, share the same moral principles and have corresponding moral concepts.

I will first start with a sketch of science ethics and then compare it with the ethics of science journalism. From this comparison I will develop a conceptual context for scientific knowledge and its intended use in society. Within this context it will become apparent why scientists and journalists aim for the same moral ends.

1 Ethics of Science

Ethics provides us with the principles to discern the good from the bad. Good science, undisputedly, is science conducted according to the principles coined by the sociologist Robert K. Merton. That is universalism, communism, disinterestedness, and organized skepticism. Universalism means that the academic work and qualification of a person are assessed independently of individual characteristics such as race, religion, or social status. Universalism is opposed to particularism where the assessment of new findings is based on the reputation and past productivity of a researcher. Communism means that all findings are communicated openly so that the ownership of knowledge is shared by all. Communism is opposed to solitarism where scientists protect their findings to ensure priority in publishing, patenting, or application. Disinterestedness means that research is separated from personal motives and motivated only by curiosity and the altruistic aim for the common welfare of mankind. Disinterestedness is opposed to selfinterestedness where scientists compete for

funding and recognition in their private interest. Organized skepticism finally means that scientists rely on a critical review. It is opposed to organized dogmatism where scientists just promote their own findings, theories, or innovations (Merton (1973) p.254-266; Mitroff (1974) p.587f).

From these principles virtues are derivable which define a good scientist: A good scientist is impartial, honest, independent, cooperative, altruistic, precise, critical, and else more (Cf. Resnik (1998) p.55ff; Jones (2007) p.36).

2 Ethics of Journalism

When it comes to journalistic virtues, independence is to be named first. Independence means that journalists gain a neutral distance to either information; they are critical even toward hitherto reliable and trustworthy sources. And journalists are careful with regard to the selection of topics and words, especially in medical reports: Responsible journalists do not raise too high expectations within patients. And journalists are disinterested; they do not fall for public relations – they do fall for the public interest instead. In sum, a journalist is independent, impartial, honest, cooperative, altruistic, precise, and critical – just like the scientist.

If both, journalists and scientists, encounter good journalists do not report uncritically from scientific press conferences. But this is exactly what happened in 1989. The media reported enthusiastically that the chemists Stanley Pons and Martin Fleischmann succeeded with the cold fusion, providing an inexhaustible source of energy. Both, the involved journalists and scientists, wanted to be first; to ensure priority they passed on experimental reproductions – which then failed (Cf. Resnik (1998) p.115; Collins (1999) p.79ff). The application of this solitarist principle for sure did not augment the credibility of science and the media. And four years later the news that a human embryo had been cloned made the headlines. The news was taken from the American Fertility Society where the physicians Jerry Hall and Robert Stillmann reported of a fertilized egg which was proliferating, then divided into single cells again which on their own proliferated anew. If it had been taken into account that the egg was fertilized by two sperms and as such not viable the ungrounded media hype could have been avoided (Cf. Resnik (1998) p.8).

What has gone wrong in these prominent cases is not so much the lack of certain virtues or the neglect of moral principles but the loss of objectivity. The chosen electrolytes do not fuse at room temperature, and a degenerated nonviable cluster of germ cells has been cloned, not an embryo. Whereas the chemists failed to describe an objective process within nature the science journalists construed an objectivity which did not correspond to the facts. Thus objectivity is fundamental to ethics. Without objectivity there would be no moral principles and virtues; neither in science nor in journalism. Only an objective scientist may be a good scientist. And a good scientist is certainly an objective one (Cf. Ziman (2000) p.56; Jones (2007) p.37). The same counts for journalists (Rager (1994) p.5f; Meyer (2006) p.242; Consoli (2006) p.533).

3 Foundations of Science and Society

Objectivity is morally fundamental because objective knowledge is the goal scientists strive for, and objective knowledge is what is needed to shape a free and just society. And that is

broadly why journalists are or should be concerned with science. Equal participation in power, just distribution of wealth, or common standards of education and health can only be warranted when there is something like an objective measure for the actual societal circumstances. And this something is scientific knowledge. Scientific knowledge is objective and can – because of its objectivity – be justified. Like the scientists a governor is expected to justify his actions. The scientists have to justify their results; otherwise the results could not account for knowledge. And the governor has to justify whether the measures taken lead to the promised circumstances, i.e. common welfare.

The close relatedness of society with objectivity becomes more obvious when we consider the reasons why people engage in science, and why society boosts science. Negatively spoken people do not want political intrigues, arbitrary rules, or every kind of fanaticism. It is they do not trust authorities where objectivity is available; knowledge is preferred over ignorance. So if people could use knowledge to regulate their affairs, if they knew which means lead to what ends they would rightly discard any unjustifiable political programme. And that is where science comes in. Scientists supply the requisite knowledge; they base their experiments in objectivity; and objectivity is the foundation scientific knowledge is based on. Having applied methods the scientists can justify their results as knowledge. The methods are the means to derive knowledge from its foundation, and finally they are the means to advance liberty, peace, and justice in society freeing it from irrational authorities.

The methods are the rationale on our way to objectivity. They erase any subjective ingredient: whoever uses the methods will come to the same results – whatever her private intentions might be. In a word, the methods are reliable. They are the means anybody can use for a check. The methods call on us to look for ourselves what nature is and how it works. With methods at hand we can justify our and other's actions; we do not have to trust authorities any more (Maslow (1966) p.136).

4 The private and the public Sphere

What makes authorities so objectionable is that they are liable to private interests. What instead is at stake in society is the public interest (Cf. Rousseau (1964) IV p.295; Smith (1976) I, I, i p.9; Schudson (1978) p.48). Journalists, at least good journalists, act on behalf of the public interest. And so do scientists. They should do so because the public is an essential prerequisite for scientific knowledge. Scientific knowledge is no private affair. It is not under the decree of certain authorities, it has to be justified. And its justification cannot remain within authorities; the justification must make its stand within the public.

The duty to publicize scientific results has two sources. The first springs from the societal use of knowledge. Not only the scientific community cares about the results but the whole society (Nida-Rümelin (1996) p.794; McLaren (1999) p.101). Here science journalists are in charge to communicate the results comprehensibly. This means that also the transferring and translating role of science journalism is important and has its moral reasons. The other – even more important role – comes from the second source. This is the role of skeptical accompaniment of the scientific enterprise. Scientific knowledge is in need of critical review. And the review can also be done by science journalists. There is no sound argument to restrict it to peer scientists.

Science journalists can bring in critical thoughts because everyone is capable of reason, and because reason establishes itself in public – as long as the free exchange of ideas and

arguments is not hampered by any dogmatic authority. Arguments and counterarguments must be left to their own reasonable course – which is a discourse. Scientific knowledge is discursive, not prescriptive. The autonomy of reason entails that anybody is free to use one's reason. Yet science journalists are prompted to use their reason. They are prompted to bring in their views on the appropriateness of the applied methods, on the societal implications of the scientific results, and not at least whether experiments should be conducted in a certain field at all, for example concerning experiments with animals.

Such moral questions related to science cannot be settled otherwise than scientifically, that is in an open, disinterested, and critical discourse (Gatzemeier (1994) p.18). And everybody is invited to take part in this discourse. It is this democratic participation of any deliberate contributor that ensures objectivity in the long run, that prevents any dogmatic enforcement of scientific ideas, and therewith forestalls the installation of irrational authorities in society. After all, social governance shall be backed by reason, not by physical or economical power (Nanda (1998) p.305; Muir (2008) p.40). The more people inspect a certain problem, the more people contribute to a discourse, or the more science ethics is extended to society the likelier it is that misleading private interests – deviating from objectivity – are revealed. Four eyes see more than two. And the revelation of private interests in society which dominate and bias the public interest is the main task of the Enlightenment's enterprise; it is the main task of science journalists. It is, so to say, a public decision what lays in the public interest.

5 The common Task of Scientists and Journalists

The quest for objectivity in science and as a consequence in society makes it a moral obligation for scientists and journalists to engage explicitly in the public interest. Where scientists and journalists fail to do so, other groups or mighty individuals form the public interest according to their private interests. As a result equal freedom for everybody could not be assured. This might even lead to a dependence of science or the media and would deprive society of the only rational means to correct drawbacks. As a matter of fact science and the media are driven by economics. The economical impetus generates economical behaviour: Publishers save money by reducing staff or cutting expenses for journalistic investigation; and scientists build up alliances for research or mutual citation (Cf. Galjaard (1999) p.75; Sitter-Liver (1999) p.93).

Not to forget the private interests of scientists and journalists that result from the competition for scholarships, assignments, funds, grants, and prestige. But then objectivity is no longer the principally cultivated value, no longer the shining signpost for research and investigations. At least it is heavily endangered; and with it common welfare in society. This requires a kind of mutual control. Scientists have to reveal the private interests of the media in the public discourse, and vice versa the media has to reveal the private interests of science. Scientists have to study the comportment of the media and its impact on society, whereas journalists have to investigate whether scientists comply with the standards of objectivity. Especially regarding science unions' claim for societal support, journalists are more eligible to reveal possible private interests of scientists than scientists could be.

The endangering of common welfare is most obvious against the background of scientific misconduct. The fabrication and misrepresenting of data simply undermines the means to establish common welfare. It corrupts and debases science altogether. Correspondingly the outrage of the media in case of scientific misconduct is stark (Woolf (1988) p.89). For example the case of the German physicist Jan Hendrik Schön has been reported regularly

from 2002 onwards when the first suspicious facts concerning his integrity were made public (Cf. table 1). The science journalists are well aware of the devastating consequences of scientific misconduct for society.

Journalists generally report and comment, they make events public and they criticize them. Inevitably journalists thereby select; and they select what they think is in the public interest. The selection precedes a critical assessment of what is relevant for the public. Therefore journalists have to investigate a topic before they can tell whether it is of public interest or not. Investigation is the journalistic research which is submitted to the moral principles of scientific research, i.e. to science ethics. In science journalism, pleonastically, the topic is science and science is to be investigated. But because of the relevance of science for society – its central role in economy – technical as well as agricultural –, infrastructure, health care, or military defence are widely undisputed – it is a topic for all editorial departments (Kohring (2004) p.175).

Furthermore science journalists must be acquainted not only with science for society but also with science in society. That is, they are not only occupied with scientific results and the methods applied but also with the manner how they are applied. When scientists experiment with syphilis on humans, with artificial iodine-fallout in the environment, with radioactivity on pregnant women (Resnik (1998) p.137) then journalists have to make these occurrences public as well as when scientists do not help people who are hurt by members of a gang while studying gang-behaviour (Greitemann (2002) p.572). Science journalists are asked to pull together scientific occurrences as well as results to clarify their connection to society (Spinner (1985) p.88f; Kohring (2004) p.283). Of course, in such cases, there need not be an antecedent public interest. But for sure these cases are cases with a public relevance. With the aid of the media the public may form its interest regarding these cases. Then the media initiates and catalyzes the emergence of a public interest that unbinds and restricts scientific conduct ethically.

In a sense the media forces the scientific community to comply with its own ethical standards. Sometimes it even contributes to the revelation of fraud as for example in the case of clone-researcher Hwang Woo Suk. In other cases journalists urge universities to notify funding agencies of a scientific misconduct. And furthermore they urge funding agencies to cut or stop funding in case of misconduct (Woolf (1988) p.88). This has been accomplished by the media and should be accomplished even better. Some information might for example be more current. When the Tuskegee syphilis-study was revealed in 1972 it had been lasting for over 35 years. The ongoing remained hidden from the public though it had been reported repeatedly in medical journals (Resnik (1998) p.136f; Pence (2004) p.289).

6 Ethics of Science and Science Journalism

To sum up, science and society back each other in the name of common welfare. A mediator of the backing is the media – in both directions. It mediates democracy to science and rationality to society. And as such the media is a catalyst and contributor to the public interest. The public interest conversely frames the morally good and bad in society (including science and the media). So the public interest shapes society and in turn scientists, journalists, and citizens shape the public interest. The one direction is deductive, the other inductive. Both are rational. The one deduces common welfare on objective grounds; the other induces common welfare out of conflicting – subjective – positions. This circle is the wheel of progress. It

epitomizes the free process in which rational argumentations provide their own foundation: objectivity.

Objectivity is morally fundamental. The duty to objectivity raises scientists and journalists over private interests. Objectivity raises them to the public interest which is the moral epitome of common welfare: The start and the end of ethics in science and science journalism.

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media	year	#	headline
Die Welt	2002	7	Leading nano-researcher shall have manipulated data
	2003	1	Fake in the U.S. but only sloppy in Germany
	2004	1	"Super-Researcher" will be deprived of PhD
	2005	2	Scandals in science have a tradition
	2006	1	Faked theories might be deadly
Berliner Zeitung	2002	5	Perturbing noise in the Bell Labs
	2005	1	Fraud as old as science itself
die tageszeitung	2002	2	Deep fall
	2005	1	Fraud also in other fields
Der Spiegel	2002	1	The Icarus of physics
	2006	1	It was the high-altitude euphoria
Focus	2002	1	The end of the laser-show
	2004	1	Forfeit follows forfeit
Le Figaro	2002	1	The little genius with 'the magic hands' faked all his experiments

Table 1: The table shows when and how often selected European newspapers reported of scientific misconduct related to the case of J.H. Schön. The right row contains headlines of exemplary articles.