

# Who Should Report about Science - Scientists, Journalists or Science Journalists?

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Usually there are three different reasons identified for communicating scientific knowledge. First of all: scientific knowledge is of use for everyone. Of high usability for example is medical advice or meteorological information. The second reason: science is part of our culture and everybody has the right to share this knowledge. The third reason for communicating science: scientific knowledge may alter the world. Our daily life is influenced to a high degree by scientific knowledge. Often this influence is of good value for most of us--like most technologies. But increasingly scientific influence is regarded as risky or even dangerous, e.g. nuclear power or genetic engineering. Societies have to decide on those issues and therefore people have to be informed about that kind of science. They should know how to vote on the development of these technologies.

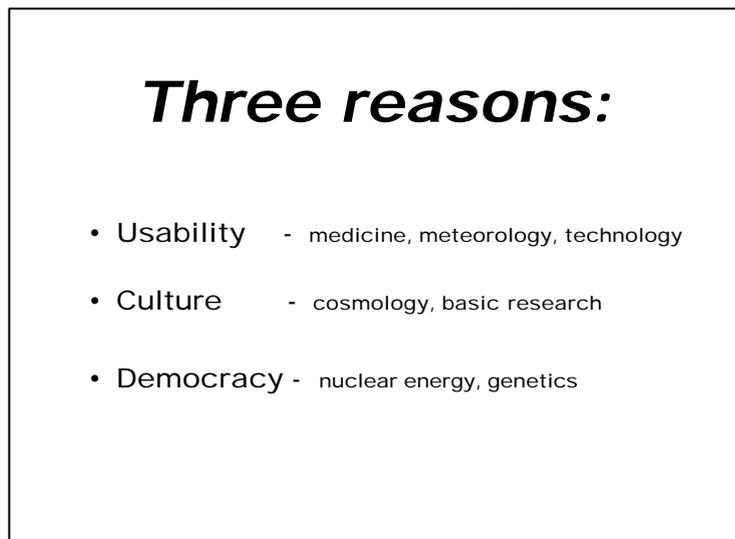


Fig. 1: Three reasons for science communication

In all these areas of popularizing and communicating of scientific knowledge media have to play an important role. Where scientific knowledge is of use for everyone media have to distribute that knowledge. That's the service-function media often have to play. Where science may provide a new insight in how the world is functioning media should disseminate these discoveries in special sections or magazines. That's the cultural aspect of science reporting. And where science itself is under scrutiny, media have to provide arguments and room or time for discussion. That's the democratic argument for science communication.

The business of reporting is the business of journalists. But in the field of science communication there seem to be some spe-

cialties. Science journalism often is regarded as one-source-reporting. And most reports on science are following the frame "Scientists from the so-and-so lab have found, that..." Especially the science sections in most newspapers or specialized magazines in tv or radio are result-orientated. In a study from our institute on science sections we found, that about one third of all reports are directly based on articles of scientific journals like "nature" or "science".

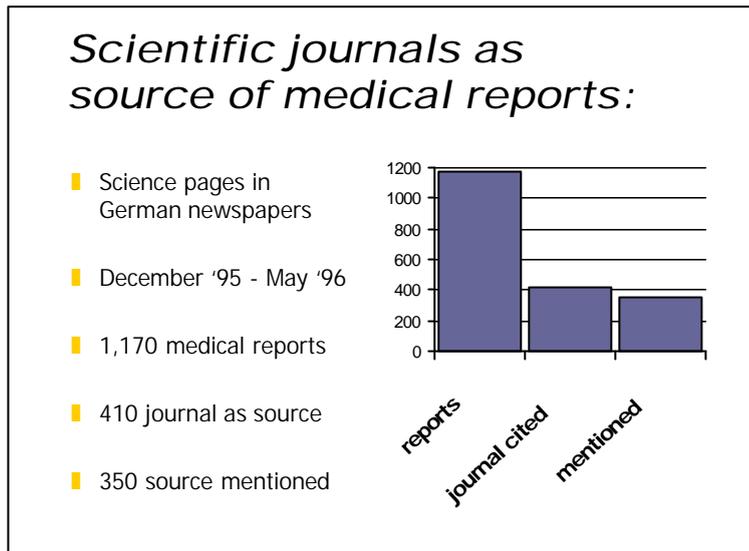


Fig. 2: Over a six month period science sections of major German newspapers were analyzed. From 1,170 medical articles around one third could traced back to articles in major science journals.

Sometimes this source has not even mentioned. But mostly a direct reference to the specific edition of the journal was given. In about 80 percent of all articles this reference was the only source of the article.

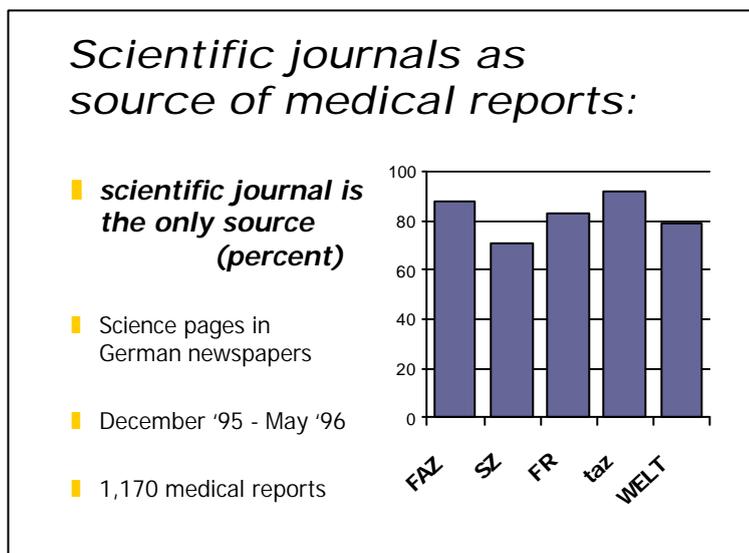


Fig. 3: Most articles in science sections are based on a single source.

The reason for that kind of journalism may be orientated on the special readership of those sections or magazines. For quality papers it might be true, that a high proportion of the readership are scientists or science related professionals. For these readers it is a kind of service to get information on science news from the dailies.

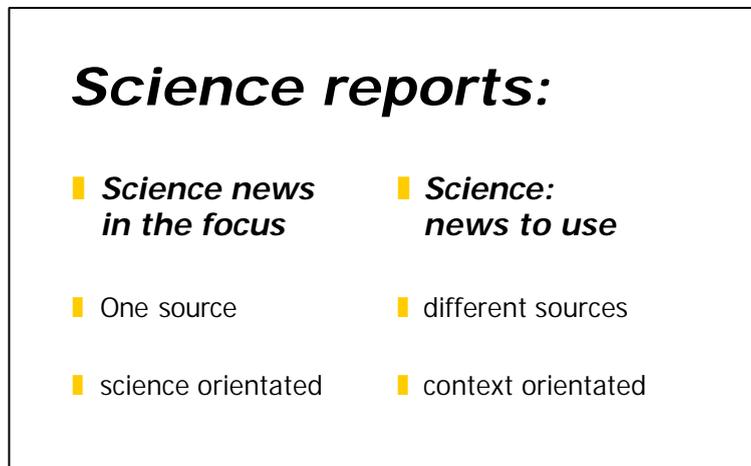


Fig. 4: Two categories of science articles may be distinguished: science news in the focus for special interest readers and science news to use: journalistic articles based on scientific knowledge for the interest of everyone.

Scientists have to read a lot: papers from colleagues, highly specialized journals, textbooks and so on. They often do not have time enough to read articles from other journals from other disciplines or from journals with no disciplinary specialization like "nature" or "science". In this respect it might be a big advantage to have a good science section in the paper with concise reporting from those journals.

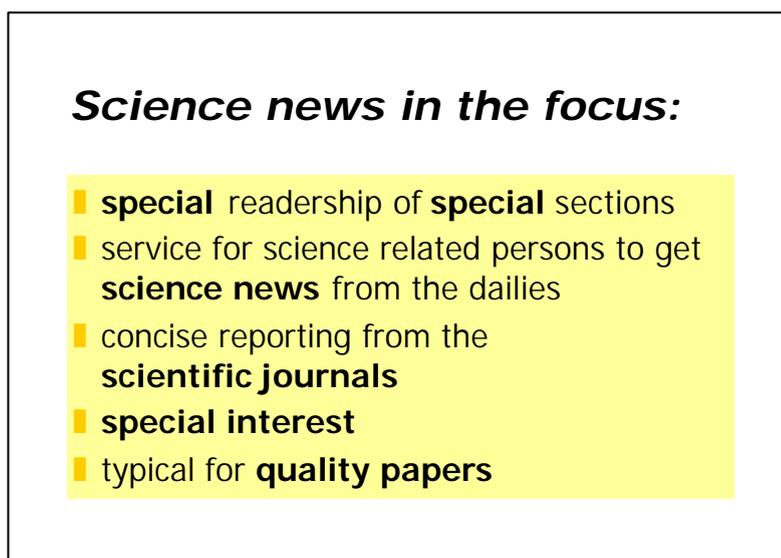


Fig. 5: The first kind of science reporting is serving only a small readership.

There is another interesting detail, how journalists in the dailies are covering science. Some scientific journals are more cited than others. The ranking of cited journals is following scientific standards. Scientific journals may be classified by the number of citations their articles get in other journals. The measure for that is the so called citation index. High numbers in citations leave to a high “impact factor” of that particular journal.

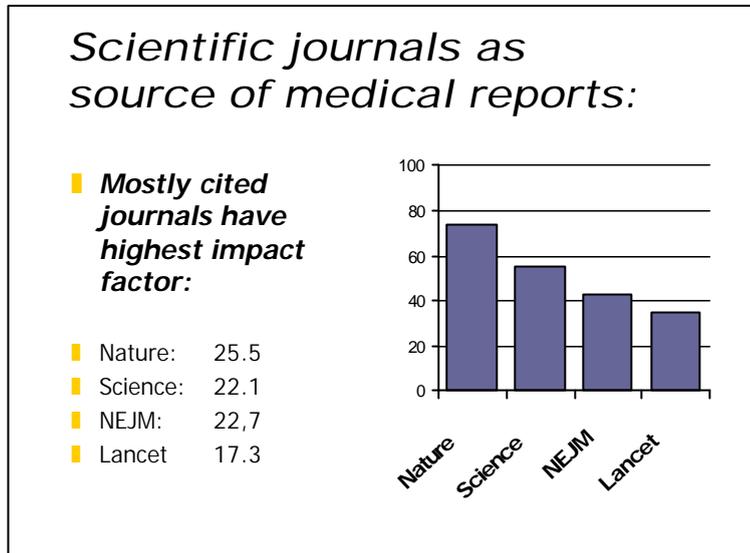


Fig. 6: The higher the impact factor of the journal (e.g. Nature, Science, New England Journal of Medicine, The Lancet) the more citations they get in the daily press too.

Further more: The scientific community is serving that way of result distribution. First: The journals like "nature" or "science" provide embargoed press releases for each edition. And these articles are more cited than other articles of the same edition which are not highlighted by a press release.

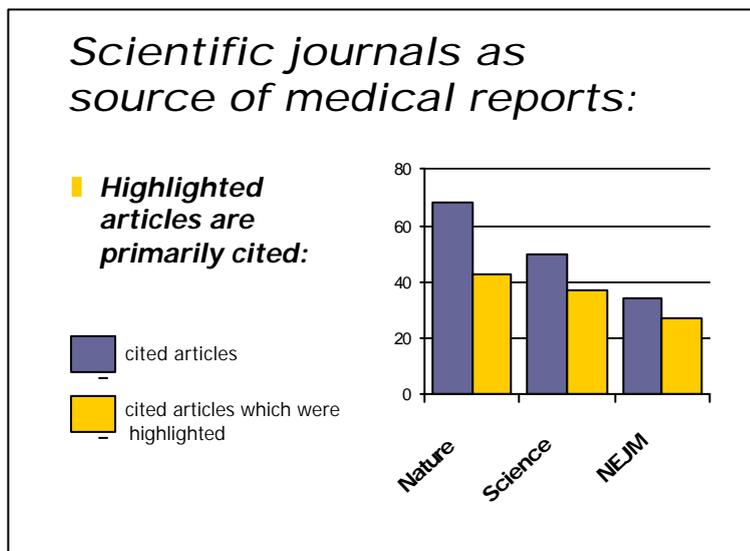


Fig. 7: High proportions of cited articles were highlighted by a press release or by mentioning in the editorial of the scientific journal.

Second: They emphasize articles they think to be important by a special notification in the editorial. And as our study demonstrated: journalist do report especially these stories. Thus to a certain degree the scientific community is controlling the reporting process.

***What is the role of journalism?***

- to serve the **needs** of broad audiences
- to bridge the **gap** between science and the interests of the audience
- to look to the **context** of science and life
- to focus on the **interests** of the audience
- to cite **more** than one source

Fig. 8: Science journalism often is evaluated by standards of the scientific community. But journalism has to serve other interests.

The question is: could this kind of science reporting be regarded as journalism? This rises the question of: What is the role of journalism? One of the criteria of quality in journalism is to use (and quote) at least two sources.

***What is the role of journalism?***

- the job of science reporting is not only to **translate**
- science journalism has to look to the **context** the recipients are interested in

Fig. 9: Science journalism often is regarded as the translator of science. But that's not journalism.

Another criteria is to bridge the gap between scientists' understanding and the interests of readers. In that view the job of science journalism is not only to translate scientific speech into everyday's language--as science journalism often is regarded.

Science journalism has to look to the context the man in the street is interested in.

***Science where it is relevant to people***

- ***Science related reports can be found in any section:***
  - medical advice service
  - environmental reporting
  - or
  - current affairs issues like:
    - genetically modified potatoes
    - nuclear energy
    - doped cyclists

Fig. 10: Science journalism may be found in any section of the dailies.

There are new ways in journalism to cover science where it is relevant to ordinary people. And this kind of science journalism can be found in any section of papers, not only the science section. Predominant examples are medical advice programs in tv or articles on current affairs issues like genetically modified potatoes or energy supply by nuclear plants.

***Quality of reporting:***

<ul style="list-style-type: none"><li>■ <b><i>Science journalism:</i></b><ul style="list-style-type: none"><li>■ precise</li><li>■ concise</li><li>■ accurate</li><li>■ scientific criteria</li></ul></li></ul>	<ul style="list-style-type: none"><li>■ <b><i>Science related journalism:</i></b><ul style="list-style-type: none"><li>■ distorted</li><li>■ oversimplified</li><li>■ wrong facts</li><li>■ scientific criteria</li></ul></li></ul>
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Fig. 11: The quality of Science journalism may be evaluated by scientific criteria or by journalistic criteria.

This kind of journalism often is compared with science journalism from the science sections. And at the end of the day it is highly criticized. Mostly because of its distortions or faults. When looking closer to these faults it is obvious that they have been detected by scientists but are often overlooked by lay peo-

ple. Most readers are not interested in special details but are keen to get an overview and orientation. The goal of this kind of science reporting is not scientific accuracy but a better understanding of the world by using scientifically produced knowledge.

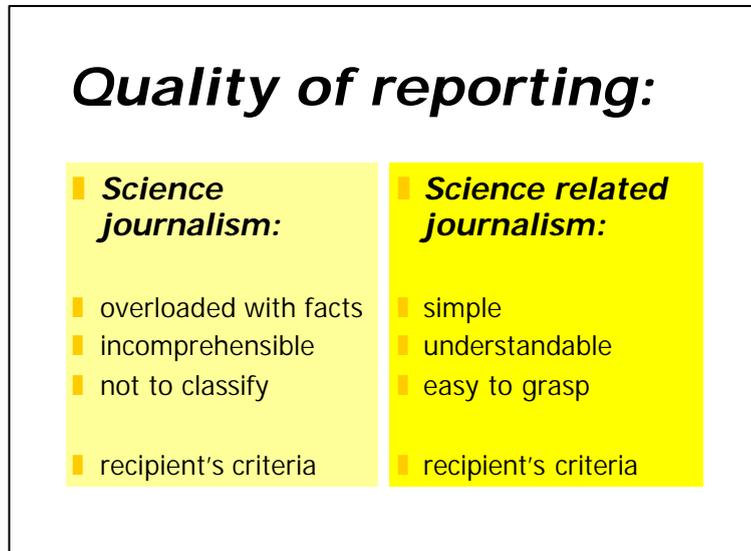


Fig. 12: The quality of Science journalism may be evaluated by scientific criteria or by journalistic criteria.

These are two different goals science reporting has to address. And it is necessary to distinguish between the two levels of serving readers interests. Science journalists should orientate on journalistic rules, not scientific needs. And scientists should know, that journalists are not the translators of scientists.

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