

Between values and news values in medical journalism

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Have you ever thought about the reason why some stories among your relatives have been repeated again and again at nearly every family party for years? Just take a pencil and write some of them down in a line! Is it something such as the first performance of your daughter in a theatre group? Is it the holiday story where your grandpa took the wrong suitcase at the airport with tons of valuables inside? Or maybe the surgery where a medical doctor has operated the wrong finger of your wife or your husband? Whatever it is, just take another pencil now and write some adjectives above each story line that could describe the nature of this story. In the end there should be a high probability that you will find words like “funny”, “unusual”, “unexpected” or “exotic” but maybe also a “conflict” or something such as “important” in the life of at least one of the family members.

The given example is usually part of my seminars for students in science journalism as well as in media trainings for scientists in order to introduce them to the field of news selection. Usually the results seem to be evident for all participants. But concerning the mass media many people –and especially the scientists among them– wonder much more why some topics are selected in the news and some others are not. Furthermore, readers, listeners and viewers often complain that the media would focus too much on bad news instead of good news (although there is some evidence that this idea is not true in science and medical reporting).

However, the issues that are selected at family parties as well as in the general media will of-

ten not be the most important ones. In extreme cases the topics may even hurt the feelings of other people or they will be at least as funny as useless. Therefore, the answer to the question what kind of stories *are* selected can be rather different to the question what stories *should* be selected considering ethical values. In the following we want to shed some light at both ends of these questions. Finally, the concept of the “German HealthNewsReview” *medien-doktor.de* and its forerunners (especially in the US) is discussed as one possibility to combine aspects of journalistic news values with ethical values.

“And medicine takes it all”: what kind of science news is selected in the media?

One first step in order to analyse the factors and mechanism concerning the selection of news from science, medicine and technology is a look on the percentage of different scientific disciplines in the media. In a detailed content analysis of more than 4000 articles dealing with scientific topics in three German broadsheets in two investigation periods we have found a constant share of medical topics of nearly 30 percent (Elmer, Badenschier and Wormer, 2008) and another 13 or 14 percent dedicated to the field of biology that often deals with contents close to medical issues. Although there are some slight differences from country to country and also between different media formats (cf. Artz and Wormer, 2011) we may say: «Altogether medicine/health and biology are constantly among the best selling science topics in the mass media

with maximum values of more than 50 percent of all science stories».¹

Whereas this strong observation and the impression that –in comparison to other science topics– often “medicine takes it all” it remains the question why some scientific disciplines tend to be more the medias’ darlings than others.

The “why”-question

In order to find explanations for a widespread preference of medical topics in the media there are at least two different pathways of explanation²: first, “intrinsic” factors of the scientific system itself and second, specific selection factors inside the media system.

Regarding the world of science first it becomes obvious that research fields such as medical sciences are bigger than others in terms of number of researchers and publications. As a consequence, there are more results, conferences and events which can be reported on than in, let’s say, archaeology. Furthermore, science communication strategies in medical sciences may differ from other disciplines that are more far away from the life of the average Joe.

Taking the media’s perspective as an explanation approach for different amounts of science reporting for different disciplines we may suppose that, on average, scientific fields such as medical science probably meet selection criteria of journalists better than others.³ Based on my own observations of thousands of editorial selection processes as a journalist for many years and based on statements of other science editors in different media a simple heuristic model for the

editorial selection process of science news was proposed (Table 1).

Approaching the “why”-question of editorial selection more from the theoretical side the classical theories of news values (also called “concept of news factors”) have to be considered. The common idea of the theory of news values is that journalists allocate events to certain characteristics (such as unexpectedness, proximity, etc.) which increase the chance of certain news to be selected. The probability of selection increases with the number of such factors fulfilled as well as with the intensity in which they are fulfilled. However, the classical news theory was developed alongside the classical (mainly political) departments of the mass media⁴ and it could be questioned to what extent it is applicable to the reporting on science and medicine. Our first findings in order to answer this question indicate that a slightly adapted theory of news values may be reasonable also to describe the editorial selection of science news. Some of the 14 identified factors (Table 2) are closely related to the simple heuristic model given before. For further explanation see the original literature (Badenschier and Wormer, 2012).

What *should* be selected?

In comparison to the question what scientific and medical issues have a higher chance to be selected in the mass media the question which issues *should* be selected seem to be even more complex: What kind of authority should be allowed to decide this? Which (universal?) criteria have to be applied to take such a decision? As journalism research proposes there will be no

¹ e.g.: Elmer C, Badenschier F, Wormer H. Science for everybody? How the coverage of research issues in German newspapers has increased dramatically. *Journalism & Mass Communication Quarterly*. 2008; 85: 878-93; Clark F, Illman DL. A longitudinal study of the New York times science times section. *Science Communication*. 2006;27:496-513; Bucchi M, Mazzolini RG. Big science, little news: science coverage in the Italian daily press, 1946-1997. *Public Understanding of Science*. 2003;12:7-24; Bauer M. ‘Science in the Media’ as cultural indicator: contextualizing surveys with media analysis. In: Dierkes M, et al., editors. *Between understanding and trust. The public, science and technology*. Amsterdam: Routledge; 2000. p. 157-178.

² Additionally to these two kinds of factors other and more time dependent factors (that is, for example, the general situation of the news market on a certain day) influence the selection of a certain issue as well.

³ Also framing effects caused by the educational background of journalists may play an important role here. For example, a very high percentage of German science journalists are biologists by training which may cause a preference for the biomedical field in the reporting.

⁴ For (probably) the first time the term “news value” was used by Walter Lippmann in his book *Public Opinion* in 1922. As one of the most important works concerning the classical theory of news values has to be considered: Galtung J, Ruge MH. The structure of foreign news: the presentation of the Congo, Cuba and Cyprus crises in four Norwegian newspapers. *Journal of Peace Research*. 1965;(2):64-90.

Table 1. A simple heuristic model of factors (based on observations in journalistic practice) influencing the editorial selection process of science news (Badenschier and Wormer, 2012).

Importance factor	Surprise factor	Usability factor
Political, economical, social, cultural, ethical, and/or scientific importance	New/different than thought before; exotic (“suitable to cocktail party”)	Advice for daily life (medical, technical...)
An important influence on the selection of scientific topics may also have:		
Actuality (Scientific, general, or both)	Possibility of visualisation (With regard to the realisation/ journalistic production of the issue)	Narrative factor (Fairy tale approach: “I tell you the story...”)

Table 2. An adapted draft catalogue of news factors with the highest impact on the selection process of science news in alphabetic order (from Badenschier and Wormer, 2012).

- Astonishment
- Composition (different disciplines on the science page, etc.)
- Controversy
- Economic relevance
- Graphical material
- Intention
- Personalisation
- Political relevance
- Range (number of affected people)
- Reference to elite persons
- Relevance to recipients/society
- Scientific relevance
- Actuality (Trigger)
- Unexpectedness

universal answer to the question what quality in journalism is. In contrast, quality in journalism is a kind of construction depending on standpoints, background, target groups, media formats, etc. However, at least several criteria could be defined that constitute quality. Even more than in other fields in medical journalism the ethical perspective

considering the effects and consequences for the recipients has to be included. Interestingly, some ethical frameworks such as the “Press Code of the German Press Council” devote “Medical Reporting” even a section of its own: «Reports on medical matters should not be of an unnecessarily sensationalist nature since they might lead to unfounded hopes or fears on the part of some readers. Research findings that are still at an early stage should not be portrayed as if they were conclusive or almost conclusive» (www.presserat.info/uploads/media/Press_Code.pdf).

For the editorial selection processes in journalism such questions may have a very concrete implication leading to practical questions for the daily life in editorial offices, for example: «Is it suitable to report on encouraging results of animal research?»,⁵ «Is it useful to report already on the results of Phase I clinical trials?», «Is it suitable to use impressive examples of single patients?» At least, already these three examples have to be reflected from the background if they «might lead to unfounded hopes or fears».

Instead of a general answer such questions touching on ethical values may often be answered only case by case depending also on the aspect “how” the reporting is done. For example, the description of a single case study may be suitable if it is described very clearly that such case cannot be generalized. This is very important especially

⁵ Obviously a very explicit warning that the development of a new drug is in a very early stage may prevent to a certain extent from unfounded hope, as an example from the German prime time news ARD-tagesthemen shows: an expert had explained there in an interview «We can cure you if you are a mouse» and different to other less clear warnings in similar emission the Cancer Information Service of the German Cancer Research Center in Heidelberg had not too much calls the following day. (Hiller, B. In: Hettwer H, Lehmkuhl M, Wormer H, Zotta F, editors. WissensWelten – Wissenschaftsjournalismus in Theorie und Praxis. Gütersloh: Verlag Bertelsmann Stiftung; 2008. p. 473.

for the reporting in television where the “personalisation” of a story is often unavoidable to fulfill the needs of a narrative factor in TV formats. We may even conclude that medical reporting always has to be a compromise of the needs from a journalistic perspective to get the attention of the broader public (e.g., described by the news values and other aspects of journalistic quality) and the needs from a medical perspective which especially includes the needs of patients and their relatives. In the last part of this chapter we will introduce now some approaches that try to bring together these two perspectives.

Media Doctors, HealthNewsReviews or towards a reconciliation of journalism and medicine

An early approach from the scientific side to evaluate the quality of health related news reports was done by Oxman et al. in 1993 who proposed an Index of Scientific Quality (ISQ) consisting of the following key criteria⁶:

- *Applicability* («Is it clear to whom the information in the report applies?»).
- *Opinion versus facts* («Are facts clearly distinguished from opinions?»).
- *Validity* («Is the assessment of the credibility (validity) of the evidence clear and well-founded?»).
- *Magnitude* («Is the strength or magnitude of the findings (effects, risks or costs) (...) clearly reported?»).
- *Precision* («Is there a clear [...] assessment of the precision of any estimates [...] or of the probability that any of the reported findings might be due to chance?»).
- *Consistency* («Is the consistency of the evidence [between studies] considered and is the assessment well-founded?»).
- *Consequences* («Are all of the important consequences [benefits, risks and costs] of con-

cern relative to the central topic of the report identified?»).

- *Overall/global* («Based on your answers to the above questions, how would you rate the overall scientific quality of the report?»).

Despite the rather scientific nature of their criteria the Oxman group tested the applicability of their index not only among physicians and research assistants but also among some members of the Canadian Science Writers' Association. Interestingly their answers reflect very clearly the above mentioned differences in the journalistic and medical perspective on the quality of reporting: «Judging from their comments, this reflects in part the difficulty some journalists had with the whole notion of separating the scientific quality of an article from its other features (such as the quality of the writing) and of making a numerical rating of this quality» (Oxman et al., 1993).

This observation also has a practical consequence for any attempt to improve the quality of medical reporting. A simple focus on scientific quality criteria may result in a rather low acceptance of proposals for improvements among journalists. This is not surprising and not special for the journalistic profession as it becomes clear if you imagine it just the other way round: How would a surgeon react if a simple journalist tried to explain him or her how and where to cut for a heart transplantation? Surgery is a business of its own with its own tools, and the same is true for medical journalism.

As a consequence, I am convinced that it is essential for a kind of “reconciliation” between medical sciences and journalism and for suitable proposals to improve reporting on medicine that such proposals consider both scientific/medical and journalistic aspects at the same time. A huge step in this direction was done by the Australian media doctor project (www.mediadoctor.org.au) and its followers in Canada (www.mediadoc tor.ca) and especially the US (www.healthnewsreview.org; see also G. Schwitzer in this notebook). Although the focus of the criteria used in these

⁶ Oxman AD, Guyatt GH, Cook DJ, Jaeschke R, Heddle N, Keller J. An index of scientific quality for health reports in the lay press. *J Clin Epidemiol.* 1993;46:987-1001.

Table 3. Criteria used by the Australian Media Doctor project to evaluate reporting of a journal article (from Wilson et al., 2009). Stories are rated “satisfactory,” “not satisfactory” or “not applicable.”

Rating criteria, the extent to which a story:

1. Reports on the novelty of an intervention
2. Reports on the availability of the intervention
3. Describes the treatment or diagnostic options available
4. Avoids elements of disease mongering
5. Reports evidence supporting the intervention
6. Quantifies the benefits of the intervention
7. Describes the harms of the intervention
8. Reports on the costs of the intervention
9. Consulted with independent expert sources of information
10. Went beyond any available media release

projects (see Table 3) remains still mainly on the scientific side they already consider some aspects which can be described also as common rules in journalism (e.g. to consult at least a second source or not to rely on a press release). Other criteria are strongly related to ethical values reminding us of elements in the above mentioned press code (avoid “disease mongering”).

For the German HealthNewsReview-portal www.medien-doktor.de we decided to go even further. First, the existing ten criteria were only slightly adapted (also in order to guarantee a certain comparability between the rating results in different countries). Secondly, results from general journalism research (about quality in journalism, news values etc.) were taken much more into account than in former projects, resulting in the introduction of three additional (“journalistic”) rating criteria⁷, these are: 1) actuality, relevance and originality of selected topic; 2) presentation and comprehensibility (language and style, etc.) of the article/piece; and 3) correctness (accuracy) of presented facts (with the original sources as a minimal standard). Thirdly, the peer review process

for the German HealthNewsReview is not done by scientists or medical doctors but by literally “peers” of the authors who have produced the pieces and articles in the mass media: experienced journalists, however, all of them with a medical and/or scientific background. All these steps may be regarded as an attempt to bring the worlds of quality in medicine and quality in journalism closer together.

The portal medien-doktor.de became fully operational in November 2010. In 2012, after more than 100 double-reviews online, we were able to evaluate the first general results systematically in the Department of Science Journalism and fed them back into the journalism community. Furthermore, we will use such evaluations for the improvement of our own journalism training and media research programs.

From the beginning we have also observed the acceptance of our advice among journalist and media companies. Initially some of them feared that –in the middle of a general “media crisis”– a new monitoring project would just put an additional pressure on them. Therefore, we have always underlined: the goal of medien-doktor.de is not to tear journalists to bits, a pastime which has become popular on many blogs (that are often made by scientists). But in our opinion just a journalism bashing by scientists does not help. Rather, our aim is to draw also greater attention to positive examples and use every review to recall what good medical journalism is all about. For the acceptance in the journalistic community it was also our goal to have leading journalists’ associations as a partner, such as the WPK (German Science Journalists’ Association) and VDMJ (Association of German Medical Journalists). Together with (and not against!) the journalists’ communities the project seeks to establish transparency with regard to quality standards in medical reporting and open them up for discussion and further development.

At a time of profound structural change in the media system, the project wants to support journalists and offer them tools for constructing pieces of good medical journalism. In some editorial of-

7. The most favoured criteria according to journalism research were discussed among the reviewers in the project. In the end they were merged into three main criteria considering also the needs and proposals of the reviewers –a proceeding which is commonly accepted in social sciences.

fices, constructive criticism from well-informed, respected colleagues could even provide an argument in the campaign for improving working conditions –this, at least, is something the *medien-doktor*-team hopes for. We are convinced that good medical journalism is coherently written and draws relevant connections; it is vital and exciting but does not generate unfounded hope, let alone fear. And we always have to keep in mind: medical journalism is not only made for medical doctors but for every-day-people, such as those (sometimes a little bit strange) relatives in your family that are going on to repeat several family stories at nearly every family party for years...

Further reading

- Anhäuser M, Wormer H. A question of quality: criteria for the evaluation of science and medical reporting and testing their applicability. In: Trench B, Bucchi M, editors. Quality, honesty and beauty in science and technology communication. Proceedings der 12 International Public Communication of Science and Technology Conference (PCST), 2012; 335-7. Available at: www.medien-doktor.de/wp-content/uploads/downloads/2012/09/Paper-Florenz.pdf
- Artz K, Wormer H. What recipients ask for: an analysis of 'user question generated' science coverage. In: Journalism – Theory, practice and criticism. 2011;12:871-88. (Special on Science Journ. in the Digital Age) Abstract available at: <http://jou.sagepub.com/content/12/7/871>
- Badenschier F, Wormer H. Issue selection in science journalism: towards a special theory of news values for science news? In: Rödder S, Franzen M, Weingart P, editors. The sciences' media connection & communication to the public and its repercussions. Sociology of the Sciences Yearbook. Dordrecht: Springer; 2012. p. 59-85.
- Elmer C, Badenschier F, Wormer H. Science for everybody? How the coverage of research issues in German newspapers has increased dramatically. Journalism & Mass Communication Quarterly. 2008;85:878-93.
- Wormer H. Improving health care journalism. In: Gigerenzer G, Gray JAM, editors. Better doctors, better patients, better decisions: envisioning healthcare 2020. Strüngmann Forum Report, vol. 6. Cambridge, MA: MIT Press; 2011. p. 169-188. Available at: [www.medien-doktor.de-> "Tools für Journalisten": www.medien-doktor.de/wp-content/uploads/2010/11/Wormer-11-Improving-Health-Care-Journalism.pdf](http://www.medien-doktor.de->\)

The German HealthNewsReview *medien-doktor.de* is a project of the Department of Science Journalism at TU Dortmund University and has initially been funded with the assistance of the "Initiative Wissenschaftsjournalismus" (Robert Bosch Foundation, "Stifterverband für die Deutsche Wissenschaft" and BASF Company). Already after a few months the website was nominated for the 2011 Grimme Online Award, the most important award for online journalism in Germany. As of 2012 and afterwards, the "*medien-doktor*" is seeking additional national and international partners interested in promoting sustainable quality assurance in medical reporting both morally and financially.