

**The Science-Gatekeeper:
A systematization of science journalists' selection criteria**

Lars Guenther

Institute of Communication Research, Friedrich Schiller University Jena, Germany

lars.guenther@uni-jena.de

Abstract

Science journalists are confronted daily with a high number of possible issues. Their publication decision is influenced by selection criteria. However, a systematization of science journalists' selection criteria is still missing. This paper therefore applies assumptions of the Gatekeeping theory to investigate the most important selection criteria in science journalism. Semi-structured interviews with German science journalists ($n = 21$) from different media were conducted. The results reveal that main factors influencing the science journalistic selection of science issues predominantly included their professional role as information provider, their own personal interest in issues, the fact that issues need to be new and relevant (news factors), and organizational criteria. Other aspects on the selection process were of minor importance.

Science journalists' selection criteria

Journalists are confronted daily with a high number of possible issues (Clark & Illman, 2006); selection criteria help them to select what topics will be analyzed and expressed to the public. Journalistic selection criteria are a research field that already gained some attention in general journalism theory. However, a systematic analysis of such selection criteria for science journalism is still missing. Conventional views on journalism theory can be tailored to science journalism, with validating general journalism theories for science journalism (Badenschier & Wormer, 2012). The theoretical approach applied here is based on Gatekeeping (Shoemaker & Vos, 2009). In the following, the main assumptions of the different influencing levels on the journalistic

selection according to Gatekeeping will be introduced sequentially. They will be extended to research results of previous investigations on selection criteria in science journalism. There are five levels to study in terms of Gatekeeping, all of which influencing journalistic selection:

At the *individual level* (Shoemaker, 1991; Shoemaker & Vos, 2009) personal interest on an issue can be significant for science journalists when selecting issues: White (1950; 1964) already pointed out that Mr. Gates selected and rejected stories because of personal evaluations and judgments. Next to personal interests, the professional role conceptions of science journalists are important on the individual level. According to Weischenberg, Scholl and Malik (2006) and assumptions of general journalism theory, professional role conceptions can be divided into information providers, critics and entertainer/service provider. For the field of science journalism, there are some initial results: Science journalists tend to see themselves predominantly as information providers, less dominantly as critics and even more rarely as entertainers or service providers (Bloebaum et al., 2003; Stamm, 1995; Wolff, 2003).

Communication routines or practices are a set of impartial rules that can be medium specific, with TV journalists more frequently identified to reject news items lacking good visuals than non-TV journalists (Shoemaker, 1991). This was also found for science journalism (Milde & Hoelig, 2011). But not all communication routines or practices are medium specific: Restrictions like time and limited space can guide journalists in their selection of issues (Shoemaker, 1991; White, 1964). Furthermore, in terms of Gatekeeping news values are understood as working rules to guide the choice of selection and salience. In German research and according to Schulz (1976) there is a distinction between news value and news factor: new factors can be seen as particular features, attributed to an event that lead journalists' selection. Depending on combination and intensity of news factors an event gets a certain news value influencing the journalistic decision on selection or non-selection. Badenschier and Wormer (2012) interviewed five science journalists and compared their results with a content analysis of one stratified week. Factors like unexpectedness and composition (variety of issues) were both highly ranked by the journalists and frequently found in the coverage. The journalists also listed factors like range (number of affected people) and relevance to the

public, but these factors had low scores in content analysis. Initial results also show that the identification of news factors in science journalism is a research field deserving more attention.

At the *organizational level*, characteristics such as organizational hierarchies, organizational size and socialization like norms and values of the organization (e.g. the media company) are of importance (Shoemaker, 1991; Shoemaker & Vos, 2009). As journalists are individuals within an organization, the selection of a scientific issue also depends on editorial processes such as the science journalists' professional relationships with both other journalists and news editors (Hodgetts et al., 2008). According to hierarchies, the editorial department and ultimately the chief editor has the position to decide which issues should be covered and which should not; they can act as a strong selection criterion. In most media companies the agenda is set by news conferences, this is also true for science journalism (White, Evans, Mihill & Tysoe, 1993).

Science journalism is also influenced by factors at the *social institutional level* (Shoemaker & Vos, 2009) like sources, public relations (PR), audience perceptions, and the coverage of other media. Firstly, what comes to attention by the media is strongly influenced by the sources the (science) journalists use to obtain information about (scientific) issues (Shoemaker, 1991; Corbett & Durfee, 2004; White et al., 1993). Secondly, the influence of PR on journalistic coverage is increasing, even in science journalism (Goepfert, 2006). Thirdly, audience perceptions are also located at this level: nowadays coverage of science tends to be more entertaining and understandable as it is focused on the needs of the audience (Hodgetts et al., 2008, Schneider, 2010; Weitkamp, 2010). Fourthly, the coverage of other media can also be influential in leading attention to certain topics in science journalism (Ebeling, 2008; Shoemaker, 1991).

At the last level, the journalistic decision which issues to select is influenced by the *social system level*. This level is not relevant here, as this paper exclusively investigates the German context. As can be seen by the theoretical approach, a high amount of influencing factors on different levels can be identified. However, it is still unclear which factors affect the work of a science journalist the most. Hence, this paper asks: *What are the most common factors influencing issue selection for science journalists?*

Method

Qualitative, semi-structured, face-to-face interviews with German science journalists ($n = 21$) were conducted. Their ages were between 31 and 63 ($M = 44$; $SD = 8.7$). Fourteen of them were male. The sample consisted of journalists from different media channels: Seven television science journalists from the most important German public channels, six journalists from the most important daily newspapers, five journalists from monthly science print magazines for a general audience and three journalists from a weekly news print magazine.

Semi-structured interviews were conducted in person by a trained researcher from a German university at the offices of the journalists between February and April 2012. Interviews were tape recorded with participants' consent and fully transcribed afterwards. The semi-structured questionnaire contained open-ended questions according to the different Gatekeeper-related levels (Shoemaker, 1991; Shoemaker & Vos, 2009). Furthermore questions were based on research results already outlined in the theoretical part (e.g. Badenschier & Wormer, 2012; Clark & Illman, 2006; Milde & Hoelig, 2011; Schneider, 2010; Weischenberg, Scholl & Malik, 2006; Weitkamp, 2010). At the end of the interview, participants provided sociodemographic information.

A qualitative content analysis was conducted on interview data. Transcripts of the interviews were the coding unit of the content analysis; two trained coders worked on the transcripts. Coding book categories were developed inductively from a sample of answers, with categories emerging from the interview data.

The content analysis revealed selection criteria on science journalists' decisions according to the different Gatekeeping-related levels: professional role conceptions, news values, the importance of visual materials for TV science journalists, influence of professional and personal acquaintances (first three Gatekeeping-levels). Answers corresponding to the social institutional level were divided into subcategories: sources and situational factors.

Results

At the individual level, fifteen science journalists stated that their work is influenced by their personal interest in issues. For instance an editor from a daily

newspaper said: “To be honest, a lot is influenced by my subjective perception and really, issues should meet my personal interest to be selected.” Furthermore, at that level we were interested in the professional role conceptions of science journalists. We asked participants to state the targets of their communication when reporting on science; answers were classified with respect to the main statements. Eighteen science journalists aimed their coverage to be a fact-orientated and neutral reporting of science; this result is related to the role of the information provider. Seven participants wanted their recipients to get a more critical view regarding science issues, comparable with the role of a critic. Furthermore, five of the science journalists wished their reporting to show visions and arouse curiosity, which is comparable with the role of entertainer/service provider.

At the communication routines or practices level there are some medium-specific differences. But science TV journalists’ issue selection did not depend on the availability of appropriate visual materials as much as was anticipated; only one journalist said that it is not possible to select an issue when there is no appropriate visual material. Conversely, five journalists said that creativity is necessary to make issues become news. At this level of analysis, a few journalists considered resources like time ($n = 3$) or space ($n = 2$) required to cover stories (i.e., length of articles or TV clip), and the financial resources available ($n = 2$). This is one influencing factor which is not specific to the type of media the journalists work for. Furthermore, we were interested in news factors of science journalism. Twelve participants said that issues have to be new to be selected for coverage. Ten of study participants mentioned audience relevance as a selection criterion for coverage. Another important factor mentioned by eight participants is connections to applications. Six participants took into account the immediacy of an event, others felt that issues need to be an astonishment ($n = 3$). What we identified is that next to news factors of science journalism, the participants in this study named factors that cannot be defined as news factors, but are important selection criteria as well. Hence, we would like to expand the communication routines or practices level to a category we define as frameworks. Ten participants said that they predominantly select issues when those issues are suitable to give them a narrative structure. Other factors influencing selection on the category we define as frameworks included visuality ($n = 4$), exclusive nature of the story ($n = 3$) and composition (variety of issues in one media outlet) ($n = 2$).

The next level important for this investigation is the organizational level. We were interested in the professional (in comparison to the personal) relationships science journalists have with their editors and other journalists. Fourteen interviewed journalists said that every issue they want to cover is discussed in editorial conferences, and sixteen got important advice from their peers. Only five participants stated that the final decision is made by the chief editor. In comparison, personal acquaintances are a less important factor, with only four participants taking them into account.

For the social institutional level and the high amount of possible influencing factors we asked the science journalists to state other criteria that come to their mind having an influence on their issue selection. We classified answers according to their main statements: (1) sources and (2) situational criteria. Sources were mentioned as influential selection criteria. For eleven journalists, public relations (PR) are the key to their work and help them to get attention on certain issues. Further, five participants said that articles in publications such as *Nature* or *Science* were main sources, additionally three of the science journalists listed scientific conferences as important source. Some science journalists mentioned situational factors like the coverage of other media ($n = 8$), when an issue occurs (e.g., lots of people get sick when winter starts) ($n = 6$), or the general attention to issues during a certain time ($n = 5$) as selection criteria.

Conclusion

Science journalists can only cover some topics out of a variety of issues; selection criteria help them to make decisions. The results in this study base on qualitative interviews but they provide insights into the most important selection criteria of science journalists by using different influencing levels related to Gatekeeping (Shoemaker, 1991; Shoemaker & Vos, 2009) to give a systematization of selection criteria in science journalism. For the journalists interviewed in this study, factors influencing their selection of science issues predominantly included their perceived professional role as an information provider, and their own personal interest in issues (both individual level), the fact that events need to be new and relevant (news factors at the communication routines and practices level), and organizational influences like the discussion of issues in

editorial conferences and the work with other science journalists (both organizational level, compare Figure 1).

social system level			
social institutional level			
<u>sources</u>		<u>situational factors</u>	
<ul style="list-style-type: none"> • PR (11) • <i>Nature</i> and <i>Science</i> (5) • scientific conferences (3) 		<ul style="list-style-type: none"> • coverage of other media (8) • occurrence of issues (6) • general attention to issues (5) 	
organizational level			
<ul style="list-style-type: none"> • important advice from the peer group (16) • editorial conferences (14) • chief editor with final decision (5) 			
communication routines			
creativity in handling with visual materials for science TV journalists (n=5)	<u>resources</u>	<u>news factors</u>	<u>frameworks</u>
	<ul style="list-style-type: none"> • time (3) • space (2) • financial resources (2) 	<ul style="list-style-type: none"> • novelty (12) • relevance (10) • connection to applications (8) • immediacy (6) • astonishment (3) 	<ul style="list-style-type: none"> • narrative style (10) • visuality (4) • exclusivity (3) • composition (2)
individual level			
<ul style="list-style-type: none"> • Personal interest (15) 		<u>professional role conceptions</u>	
		<ul style="list-style-type: none"> • information provider (18) • critic (7) • entertainer/service provider (5) 	

Figure 1

This study was explorative in nature, interviewing only 21 journalists, all of them working in Germany. On the basis of promising findings, we propose developing a standardized questionnaire to be tested it in a representative sample. Such a survey can reveal the most important selection criteria of science journalists and ask – according to the influencing factors detected in this study – how much they impact the selection choice of science journalists. Cultural differences in selection criteria might be detected if this

study would be repeated in different countries; with the help of that approach the social system level of Gatekeeping (Shoemaker, 1991; Shoemaker & Vos, 2009) can also be included.

References

Badenschier, Franziska y Holger Wormer (2012), "Issue selection in science journalism: Towards a special theory of news values for science news?", en Roedder, Simone, Martina Franzen, Y Peter Weingart, The science's media connection and communication to the public and its repercussions, Dodrecht, Springer, pp. 59-86.

Bloebaum, Bernd, Alexander Goerke, Holger Hettwer, Marcel Machill y Franco Zotta (2003), "Wissenschaftsjournalismus bei Regional- und Boulevardzeitungen. Befragung, Inhaltsanalyse und Ausbildungsperspektiven" ["Science journalism at regional newspapers and tabloids. Survey, content analysis and training perspectives"]. Available at: http://www.bertelsmann-stiftung.de/cps/rde/xbcr/SID-3701A280-79A23DE7/bst/Endfassung_RegionalStudie_pag_04-09-13.pdf [date of access: 14th February 2014]

Clark, Fiona, y Deborah L. Illman (2006), "A longitudinal study of the New York Times Science Times Section," Science Communication, 27, pp. 496-513.

Corbett, Julia B., y Jessica L. Durfee (2004), Testing public (un)certainty of science: Media representations of global warming," Science Communication, 26, pp. 129-151.

Ebeling, Mary F.E. (2008), "Mediating uncertainty: Communicating the financial risks of nanotechnologies," Science Communication, 29, pp. 335-361.

Goepfert, Winfried (2006), "The strength of PR and the weakness of science journalism", en Bauer, Martin Y Massimiano Bucchi, Journalism, science and society, London, Routledge, pp. 215-266.

Hodgetts, Darrin, Kerry Chamberlain, Margaret Scammel, Rolinda Karapu, y Linda W. Nikora (2008), "Constructing health news: Possibilities for a civic-orientated journalism," *Health*, 12, pp. 43-66.

Milde, Jutta y Sascha Hoelig (2011), "'Das Bild ist staerker als das Wort' - Selektions- und Darstellungskriterien von TV-Wissenschaftsjournalisten beim Thema 'Molekulare Medizin'" ["'The image is stronger than the word' - selection and depiction criteria of TV science journalists on the issues 'Molecular Medicine'"], en Ruhrmann, Georg, Jutta Milde Y Arne F. Zillich, *Molekulare Medizin und Medien. Zur Darstellung und Wirkung eines kontroversen Wissenschaftsthemas [Molecular Medicine and the media. Representation and impact of a controversial science topic]*, Wiesbaden, VS, pp. 70-97.

Schulz, Winfried (1976), *Die Konstruktion von Realitaet in den Nachrichtenmedien [The construction of reality in the news media]*. Freiburg/Munich, Alber.

Shoemaker, Pamela J. (1991), *Gatekeeping. Communication Concepts 3*, London, Sage.

Shoemaker, Pamela J., y Tim P. Vos (2009), *Gatekeeping theory*. New York, Routledge.

Stamm, Ursula (1995), "Recherchemethoden von Wissenschaftsjournalisten und –journalistinnen" ["Research methods of science journalists"]. Available at: http://www.polsoz.fu-berlin.de/kommwiss/institut/wissenskommunikation/media/stamm_fobe1.pdf. [date of access: 14th February 2014]

Weitkamp, Emma (2010), "Writing science", en Brake Mark L. Y Emma Weitkamp, *Introducing science communication. A practical guide*, London, Palgrave, pp. 79-104.

Weischenberg, Siegfried, Maja Malik, y Amin Scholl (2006), *Die Souffleure der Mediengesellschaft. Report ueber die Journalisten in Deutschland [The prompters of the media society. Report about the German journalists]*. Konstanz, UVK.

White, David M. (1950), "The 'Gate Keeper': A case study in the selection of news," *Journalism Quarterly*, 27, pp. 383-391.

White, David. M. (1964), "The 'Gatekeeper': A case study in the selection of news", en Dexter, Lewis A. Y David M. White, *People, society, and mass communication*, London, Collier-Macmillan, pp. 160-172.

White, Stephen, Peter Evans, Chris Mihill, y Maryon Tysoe (1993), *Hitting the headlines. A practical guide to the media*, Leicester, The British Psychological Society.

Wolff, Xenia (2003), "Wissenschaftsjournalisten und ihre Verbaende. Fragen zum Selbstverstaendnis und zur Einstellung zu Berufsverbaenden. Eine Umfrage unter organisierten und nicht-organisierten Wissenschaftsjournalisten" ["Science journalists and their associations. Questions on self-understanding and attitude to professional associations. A survey among organized and non-organized science journalists"]. Available at: http://www.polsoz.fu-berlin.de/kommwiss/institut/wissenskommunikation/media/wolff_fobe.pdf. [date of access: 14th February 2014]