

Parallel Session 32: Science and media research

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Science in the news: a cross-cultural study of newspapers in five European countries.

This study has been generated from material constructed as part of the ENSCOT (European Network of Science Communication Teachers) project. As part of this project, researchers in five different countries are preparing teaching materials on aspects of science in the media. In this paper we present initial findings from a “snapshot” of science reporting in French, German, Irish, Spanish and United Kingdom newspapers during April 2001. Science stories or science-based stories were collected from newspapers in each country over a four-day period. We compiled print media samples for each country that were intended to reflect some of the diversity in the newspaper marketplace. In each of the country samples there were popular or mid-market newspapers with no specialist science staff as well as (mainly) elite newspapers with science editors, science correspondents or other designated specialists in the domain. For the study, we developed an inclusive definition of a science-based story and applied it across the selected media outlets to produce a sample encompassing diverse journalism formats. After applying this selection procedure, a number of observations were made which were constant across cultures, which we will present. These results include:

- A large majority of sampled stories was based on life sciences, or biomedical sciences.
- A small minority of the sampled stories was based directly on material published in the scientific journals.

The paper will examine differences in selection and treatment of science news across these five European countries and the challenges this raises for science communication researchers.

Background

The study of science reporting in the European news media has been an active field of scholarship for many years (for example, de Cheveigné and Véron 1996; Bucchi 1998; Fayard 1993; Gregory and Miller 1998; Hansen and Dickinson 1992; Hansen 1994; Holliman 1999; Kitzinger 1990; Neresini 2000; Peters 1995). Only a very small proportion of published analyses address cross-cultural comparisons. One of the co-authors of the present paper has argued the value of comparative analysis as an alternative to the dominant normative mode of analysis of science news (Trench 1998). The weak representation of cross-cultural comparison is all the more remarkable when it is acknowledged that science constitutes an international culture, and the original sources for much of the material that reaches wider audiences through mass media are journals that circulate “information subsidies”¹ internationally. These and other features of the relations between science and news media offer unique opportunities for cross-cultural studies of news selection and representation.

This study has been generated from material constructed as part of the ENSCOT (European Network of Science Communication Teachers) project (for more information on ENSCOT, see Miller *et al.* 2001)². This European Union-funded network is supported within a programme that addresses the public awareness of science, in this case by exchanging good practice in the teaching of science communication. As part of this project, researchers in five different countries are preparing teaching materials on aspects of science in the media. In this paper we

¹ For a detailed definition, and discussion of the role of “information subsidies”, see Gandy (1982).

² Further information about ENSCOT can be found at: <http://www.ucl.ac.uk/sts/enscot/>

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present initial findings from a "snapshot" of science reporting in French, German, Irish, Spanish and United Kingdom newspapers during April 2001.

Methods

Science stories or science-based stories were collected from newspapers in each country over a four-day period. We were not aiming to produce detailed quantitative findings but rather to indicate trends and tendencies. So, while we did have reason to consider carefully the criteria for inclusion or exclusion of specific stories, we do not offer detailed tables or precise comparisons.

We compiled print media samples for each country that were intended to reflect some of the diversity in the newspaper marketplace. This approach represented a departure from the more usual concentration in science news studies on elite newspapers with specialist science coverage. In each of the country samples there were popular or mid-market newspapers with no specialist science staff as well as (mainly) elite newspapers with science editors, science correspondents or other designated specialists in the domain. The numbers of newspapers sampled for each country were France (7), Germany (8), Ireland (9), Spain (5), United Kingdom (8), representing a total of 37 newspapers.

We then identified a period of four days – 26, 27, 28, 29 April 2001 (Thursday to Sunday inclusive) – during which we would collect from our respective press samples any items that we defined as 'science stories' or 'science-based stories'.

The selection of the date range was based partly on pragmatic factors, i.e. when it suited us to do the exercise, but also on the knowledge that April 27th 2001 was Sun-Earth Day³. It was also based on the knowledge that most science reporting tends to take place in the later days of the week because of the publication of several prestigious scientific journals on these days.

For the study, we developed a definition of a science story as one which:

included a significant explicit scientific content, namely a reference or references to scientific findings, scientific research, scientific procedure, science as an intellectual activity or scientists in their professional capacity.

In this range of science stories we included social science research and government reports on social issues that were based on formal social science research. We also determined that medical stories should be included if they included elements of explanation of a scientific process, or of a disease's effects. The much more numerous references to matters of personal health and lifestyle, or the passing references to healthcare policy and administration, did not merit the inclusion in our samples or the articles containing those references.

Using this definition of a science story, this study examined, among other issues, whether newspapers in different countries used the same sources for items of science news, and the same range of sources when reporting those items, whether the same general types of scientific research were covered, and whether differences in the

³ Sun-Earth Day was an event sponsored by the European Space Agency (ESA). Its aim was to promote the work of ESA's solar observatories.

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reporting could be explained by specific factors within a culture. One specific issue, whether there was reference to research undertaken at a European level, was also examined. As such, the results we discuss here provide useful initial insights into cross-cultural definitions of science news across these five European countries.

Results

After applying this selection procedure, a number of observations were made which were constant across cultures. These results include:

1. A large majority of sampled stories was based on life sciences, or biomedical sciences (including palaeontology, medical research, and psychology).

This was no surprise, though the degree of dominance of such stories was perhaps unexpected. This tallies with previous studies of media coverage of science which highlights this medicalisation of science reporting (for example, see Bauer 1998).

2. A small minority of the sampled stories was based directly on material published in the scientific journals.

Although previous studies have argued that leading scientific journals strongly shape science coverage in the media (for example, Nelkin 1995), this influence has not been reflected in this snapshot. The explanation lies mainly in our inclusive definition of a science story. But it may also be the case that some published studies of science news in which the scientific journals play a more central role are built on a circular construction. The definition of a science story is one which fits most completely with the familiar genre that opens with some variation on a phrase such as “Scientists at [institution X] have discovered that [finding Y], according to a paper published in [journal Z]”.

The one example of a news item from the same original source (the science journal, *Nature*) being reported in each of the five countries concerned a paleontological find represented as “dinosaur with feathers”. This was the subject of one report in the French newspapers, two reports in the Spanish and British newspapers, and three reports in the German and Irish newspapers.

3. Much of the scientific content was ‘background’ rather than ‘foreground’.

These stories with science in the background mainly dealt with politics, public inquiries, medical practice, agriculture, gardening, personal health advice etc. There were, for example, many stories on agricultural and veterinary questions — foot-and-mouth disease, ‘mad cow’ disease — which were focused on latest developments in crisis management, but which made later, and subsidiary, references to scientific procedures or treatments. These articles were often the hardest ones to code as science news.

4. Very little of the science reported could be characterised as “European science”.

There are many examples of local or national science, and many examples of international science. But in this second category there are few, if any, examples, of international collaboration that might be defined specifically as “European science”. We found no explicit reference to science conducted as part of a European Union-funded project or programme.

5. There was no reference in any of the sampled newspapers to Sun-Earth Day.

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Despite this initiative being strongly supported by the European Space Agency (ESA), it received no coverage in the news media, an absence we attribute mainly to the event's lack of discernible news values and the dissemination practice of the ESA itself.

6. Several thematic areas were identified within which similar numbers of science news items across the samples of several countries were clustered. These included BSE/CJD/FMD, genetics and stem cell research, and drugs and medical treatments.

As well as drawing these general conclusions, our study examined science reporting in each country during the sampling period. This country-by-country focus reveals factors *within* a specific culture which influence science reporting. In Ireland, for example, reporting of the 15th anniversary of the Chernobyl disaster was influenced by the strong presence in Ireland of a charity – Chernobyl Children's Project – specifically concerned with the disaster and its aftermath. On the same issue, discussion in German newspapers on the Chernobyl anniversary focused on the future of nuclear power in the country.

Stories in which science featured in the background, such as politics or medical practice, were influenced by factors within a culture. In Spain, for example, these types of stories – on euthanasia or cannabis legislation, for example – referred to current issues in the Spanish political arena and to Spanish legislation.

Furthermore, there was debate as to whether some articles should be included in our definition of a science news story. In the Irish sample, a profile of the assistant state pathologist, Dr Marie Cassidy, was included as it referred to pathology in general though not in any detail to procedures in her work as a pathologist.

The study also noted similarities in the genres of science reporting across cultures. Most common is a variation of the type of journalistic construction already mentioned: "Scientists at [institution X] have discovered that [finding Y], according to a paper published in [journal Z]". Another common genre of reporting science news, the study noted, focused on a cure for a specific ailment. This genre links with the related issue of the medicalisation of science news already mentioned. These stories have a variation on the structure: "Scientists have discovered (information) which may lead to a cure for (disease)". These are common formulas for introducing science stories because it demonstrates that *something* has happened, which is a criterion for something to be defined as news.

Reasons have already been given as to why stories from scientific journals are poorly represented in the sample. But the study showed that when a common story was reported across different countries, the source was a leading scientific journal, in this case *Nature*. So shared science stories usually have a shared source (a science journal), and the resultant journalistic article usually has the same formulation (most likely one of the genres described above). We note that, on the evidence presented here, a story based on the publication of research in a scientific journal is more likely to feature science in the foreground.

As for the selection of topics, the study showed how the majority of science stories across different cultures focused on medical news. These stories were chosen from a

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variety of different sources: scientific journals, syndicated news agency material, government reports, and in some cases journalists' own news-gathering routines.

Conclusion

This paper presents results from an analysis of a four-day sample of newspaper coverage from five European countries. It documents the distribution of science coverage across a range of elite and popular newspapers in five countries and considers the sources of these articles. It illustrates some common themes, notably that few of the articles included in the sample were generated from scientific journals. We note, however, that this finding could be the result of our inclusive definition of science news and that we were working with a limited sample.

This raises an important issue worthy of comment; the challenges faced by media researchers in defining what counts as science news in France, Germany, Ireland, Spain and the UK. The descriptive analyses discussed in this paper introduces a cross-national comparative element to the analysis of science news. It offered a rare but worthwhile opportunity for the authors to reflect on their own practices in conducting media analyses with researchers from five countries and, in particular, in defining what we consider to be science news. In many cases this was unproblematic. There were occasions, however, when these categorisations were contested and compromises had to be reached. Hence, we do not offer a definition of science news that is unproblematic in its application. We would argue that the process of reflecting on how media researchers was an extremely valuable one. As such, we believe the results of this work will be highly relevant to those considering cross-cultural definitions of science news.

In conclusion, we argue that research which examines how science news is defined by media researchers from a range of cultural settings could provide interesting insights which further inform this issue.

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