

Scheduled science: TV coverage of science, technology, medicine and social science and programming policies in Britain and Germany

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I present an analysis of the content, audience share and scheduling of TV coverage of science, technology, medicine and social science in Britain and Germany. The sample consists of all science-related programmes broadcast from October to December 1992 during broadly defined peak hours. Four British TV channels were compared with 16 German channels. Nine different content categories were defined, which exhibited some interesting differences. There were some differences in the programme makers' approach to different subjects such as medicine, environment and social sciences; and there were many differences in scheduling practices. The more competitive market in Germany leads to an even sharper separation between the public and the commercial sector, but a second distinction seems to be more important: the public sector, at least, tends to separate a more popular from a more specialist strand. Strategies for science broadcasting are discussed with comments from prominent science producers and editors in both Britain and Germany.

Introduction

It has often been claimed that British television achieves the highest standard in the world.¹ It has also been stated that there is a remarkable tradition of science reporting in the UK. The question I ask here is: to what extent is this success a consequence of the fact that Britain sustains a well-established broadcasting system of four channels, while in other European nations, such as Germany, many more providers have entered a more competitive market? What are the implications for science coverage of the multi-channel expansion of European television?

The British–German comparison could shed light on this, since historically both systems had strong public service traditions. In spite of starting commercial TV earlier than Germany, British television still enjoys a balanced four-channel system which permits quality, while Germany faces a strong competitive TV system that is moving down-market. This situation has noteworthy influences on science reporting, and science editors have different strategies for meeting the challenge.

In order to compare British and German science coverage, I asked three main questions. First: are there any differences between the total output of science reporting on British TV channels and comparable German ones? Secondly: are there differences in the subject matter and approach of science reporting? Thirdly: are there differences in scheduling

policies? The answers to these questions may give some indications of the future of science reporting in European television.

Sample and method

The study consists of an analysis of content, audience share and scheduling of science coverage on British and German TV. The sample was taken during a three-month period from October to December 1992. In both countries this is usually a good time for science reporting since the science programmes are more frequent in winter than in summer, and Christmas offers an extra opportunity for scientific programme scheduling.

Other studies have calculated the total amount of science coverage, including night-time transmissions and schools programmes.² But since I was mainly interested in science reporting which reaches a broad public, and which therefore could have an impact on the public understanding of science, a selection had to be made. Firstly I selected programmes broadcast only between 17.00 and 24.30 on Mondays to Fridays, 12.00 and 24.30 on Saturdays, and 09.00 and 24.30 on Sundays. These are usually the times when substantial audiences can be reached. Secondly, I selected only complete programmes which were obviously devoted to science. News programmes were excluded, as were non-science magazines, which only occasionally included individual science items.

Thus, my focus was on all programmes broadcast during the main viewing times which were definitely devoted to science, according to the listings in TV magazines and in the daily newspapers. This includes programmes not labelled as science programmes, such as current affairs programmes on occasions when they dealt with scientific subjects. 'Science' here is defined in a broad sense, and includes medicine as well as technology and social sciences. A science programme is thus defined as a programme devoted predominantly to presenting scientific methods, findings or knowledge, either by elucidating scientific methods and findings or by citing scientists or by referring to basic scientific knowledge. This definition matches well the criteria used by Anders Hansen.³

The channels observed on British television were: BBC1, BBC2, ITV (London) and Channel 4. ITV consists of a number of regional broadcasting companies, but was regarded as a nationwide channel (and audience figures were counted from all ITV stations) since most of the programmes, and all of the science programmes, that were transmitted in London were also transmitted by all the other ITV companies in other regions. Cable and satellite programmes were ignored since their viewing figures were still very low at the time of the study: figures from July 1992 show 340 000 subscribers to cable and 1.5 million to 2.5 million homes with access to satellite programmes. Satellite programmes present little or no science reporting. The overall viewing figures for cable and satellite together hardly exceed more than 5 per cent of the total audience.⁴

German television consisted of all German channels in the Berlin cable system (excluding special-interest channels such as sports and ethnic minority channels): ARD, ZDF, SAT.1, RTL, 1plus, 3sat, arte, Pro7, Kabelkanal, Tele5, B1, ORB, MDR, BR3, West3, and FAB. These constitute 16 full-time channels. Most of them can be received all over Germany, but some only via satellite or cable; and five channels operate partly on a regional terrestrial basis. The overall viewing figures for cable and satellite are much higher in Germany than in Britain. Table 1 shows a comparative classification scheme with a breakdown of channel types, and indicates how British and German channels were grouped: public or commercial, terrestrial, satellite or via cable. The distinction between 'popular' and 'specialist' is that 'popular' channels usually serve the tastes and interests of great majorities, while 'specialist' programmes usually serve minorities as well as attentive

Table 1. Classification of British and German TV channels. 'Popular' channels usually meet the taste and interests of great majorities, while more 'specialist' programmes usually serve minorities as well as attentive and educated people. The British ITV channel is taken as a nationwide system since most programmes are presented on all of the regional channels. Popular German channels by-and-large are transmitted nationwide, but some are regional; they include terrestrial, cable and satellite channels. Public specialist programmes are either via cable and satellite, or regional and terrestrial, or both. There is only one German commercial channel serving minorities, which is regional and on cable only.

	Britain	Germany	
Public, popular	BBC1	ARD, ZDF	nationwide
Public, specialist	BBC2	1plus, 3sat, arte	on cable and satellite only
		B1, ORB, MDR	regional, terrestrial
		BR3, West3	regional, terrestrial and on cable and satellite
Commercial, popular	ITV	SAT.1, RTL	nationwide
		Pro7, Kabelkanal, Tele5	regional, terrestrial and on cable and satellite
Commercial, specialist	C4	FAB	regional on cable only

and educated people.

Most content analyses subdivide items into content categories. Such a system can be helpful in international comparisons as well as in longitudinal studies. The problem is that there is no single comparable category system; and, worse, most researchers give no clues to how they define their categories. In my scheme I followed Hansen, who gives some indications of how he classified media science content.⁵ But I grouped his 15 categories into nine major categories:⁶

1. *Natural sciences*
Natural history, life science, biology, ecology, paleontology, geography, geology, earth-history, meteorology
2. *Medicine*
Medical diagnosis, medical treatment, medical technology, preventive medicine, pharmacology, veterinary medicine, health, nutrition, public health, genetics, genetic engineering
3. *Technology*
Energy, information technology, computing, biotechnology, applied sciences, industrial production techniques, technical devices, agriculture, engineering, traffic, military R&D
4. *Social sciences*
Sociology, politics, economics, market research, psychology, psychiatry (social aspects), anthropology, ethnology, education, archaeology, social geography, traffic (social aspects), technology assessment, peace studies, parapsychology (social/psychological aspects)
5. *Environment*
Natural disasters, waste management, resources exploitation, resources

depletion, nature conservation, endangered species, global warming, biosphere, population growth, urban planning, hazardous substances, radiation risks

6. *Pure science*
Basic research, physics, chemistry
7. *Science in society*
History of science, scientific method, science policy and legislation, research funding, science education, lives of scientists, dissemination of scientific knowledge, public understanding of science, ethics
8. *Space*
Cosmology, astronomy, space technology
9. *Others*

There has been some discussion of whether programmes about the social sciences can be classified as science reporting. Social sciences have reached a high methodological standard, and meet most definitions of scientific reasoning; but not all programmes dealing with political, social or economic problems can be regarded as social science reporting. These programmes must refer to scientific reasoning by elucidating scientific methods and findings or by citing scientists or by referring to basic scientific knowledge, as required by the definition of a science programme I stated earlier.

Results

The overall amount of science programming was greater in Germany than in Britain, because of the greater number of channels in Germany. In the three-month period under study there were 627 science programmes on German TV and 215 on British TV, totalling 24 150 minutes in Germany and 7860 minutes in Great Britain. In spite of there being four times as many channels in Germany as in Britain, the total output in Germany was only three times that of Britain.

Comparing the distribution of subjects of science reporting in the two countries, I found more similarities than differences (see Figure 1). There was a predominance of nature programming on British as well as on German TV. One could argue whether this kind of programme is a science programme, because this category includes some gardening programmes. But during the period under study, all gardening programmes had substantial references to scientific reasoning. The majority of nature programmes were about animals, natural history or ecology.

Medicine and health usually rank very high in science coverage in all media. Both British and German television have long traditions of reporting health and medicine.⁷ Though Britain had no doctors' programmes and no special-interest magazines covering medicine, the output of medical programmes in the UK was higher than in Germany. German producers prefer advice programmes, while in Britain documentaries, especially drama-documentaries, are used. Programmes of this kind are a remarkable innovation in science reporting since they combine very entertaining real-life drama with documentary, and still include factual advice. They can be found on popular channels at peak times, and reach high proportions of the audience.

The output of social science reporting in Britain is also greater than in Germany. This is partly because there have been a lot of current affairs programmes looking for a scientific explanation of social events.

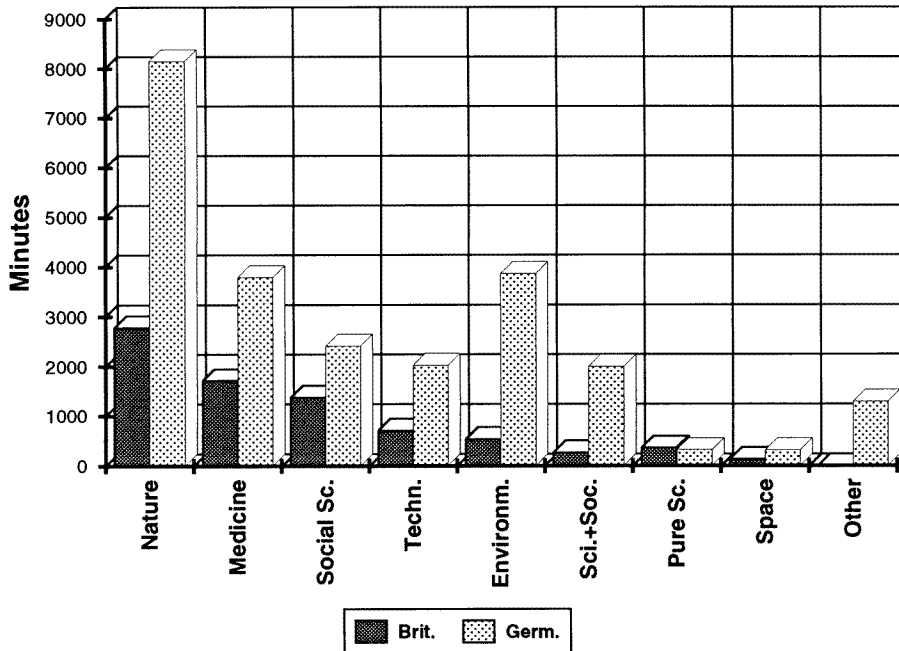


Figure 1. Total running time of different categories of science programmes. The total output of 16 German TV channels is only three times as much as the output of the four British channels. There are more similarities than differences in the favourite subjects: British hits are, as in Germany, nature programmes. Compared with the UK, the amount of environmental reporting in Germany is rather high. The high figures for 'other' in German TV is accounted for by magazine programmes which deal with lots of different subjects.

Compared with Britain, there are many more programmes covering the environment in Germany. This finding corresponds to the higher value that German people attribute to the environment, which can also be seen in the better election results of the 'Greens' in Germany. Scientific explanations of the greenhouse effect, radiation risks or the damage to the ozone layer are of great interest to German audiences. The greater amount of coverage of science in society is due to the great attention that is paid by German programme producers to documentary or dramatized portrayals of great scientists of history.

Comparative content analyses and the audience potential

Willems and Hanssen measured the broadcasting time on TV devoted to information on science and technology, and found that in The Netherlands, Belgium, Great Britain and Germany about two per cent of broadcasting time is devoted to science.⁸ They found no pronounced differences between these countries in relative terms, but in absolute terms they stated that Germany devoted about twice as much time to these subjects than the other countries do. However, because of their special selections of channels analysed (e.g. non-commercials only), the results can not be regarded as objective overall.

Bernon-Gerth analysed a four-week sample of science programmes in the UK and France.⁹ By and large, there were no notable differences between the two countries when considering the content categories.

Hansen found different results in his analysis of an eight-week sample of television, radio and newspaper coverage of science.¹⁰ Considering only television, medicine and health accounted for a quarter of all science reporting. Social sciences came next with about 18 per cent. These differences from this study may be because Hansen included news programmes as well as morning television output.

In many international content analyses the total numbers of programmes are compared, as well as running time and categories. However, little attention is given to the fact that all these programmes are presented at very different places in the schedule where they have the potential for very different audience shares. In terms of public understanding of science, the size of the audience share has to be taken into consideration.

The usual way to look at the audience share is to look at it as a result of the programmes' content and style or format. But in the case of science programmes, audience share is much more a result of scheduling. According to experience, the same programme will achieve a much higher audience share when presented at peak time in the popular channels than, for example, when presented in the afternoon or on specialist channels.¹¹

The influence of scheduling policies

To examine the influence of programming policies I concentrated on the scheduling of science programmes. The question I asked is: what kind of science programme is presented at peak times in the schedule on the popular channels? I defined 'real prime time' as between 19.00 (17.00 on Sundays) and 23.00, and distinguished between public and commercial channels as well as between popular and specialist channels (see Table 1). One hundred and sixty-nine (79 per cent) out of 215 British programmes were transmitted in prime time thus defined; for Germany the numbers are 301 out of 627 (48 per cent). This result shows a considerable difference between the British case and the German multi-channel case.

This difference is even more sharply defined if we examine the kind of channel that is presenting these programmes. Seventy out of 215 British programmes were presented on popular channels at real prime time, but only 45 out of 627 German programmes. This corresponds to 33 per cent in Britain for science programmes in popular channels at real prime time, compared with only 7 per cent in the multi-channel system in Germany.

Figure 2 shows the distribution of programmes (on the basis of running time) over different channel types. In spite of the fact that these programmes can be watched in prime-time slots, this picture does not mirror the potential of audience share reached by these programmes. Loaded with the audience share, the second part of Figure 2 makes clear that scheduling at prime time plays a minor role compared with scheduling on popular channels.

Despite the fact that BBC2 (a public, specialist channel) presents twice the amount of science reporting as BBC1 (a public, popular channel), the output in viewer-minutes (the number of viewers multiplied by the number of minutes) of the two channels is nearly the same. But the large amount of science reporting on Channel 4 (a commercial, specialist channel) does not reach the number of viewer-minutes achieved by the small output of ITV (a commercial, popular channel). And the much more interesting finding for Germany is that the huge majority of programming on public, specialist channels reaches barely half of the audience reached by the small fraction of programmes presented on public, popular channels. Commercial, popular channels hardly keep up, but the only commercial, specialist channel achieves almost zero.

To analyse scheduling policies it may be worthwhile to have a closer look at which kinds of channels cover which kinds of science. Figure 3 shows the distribution of the global

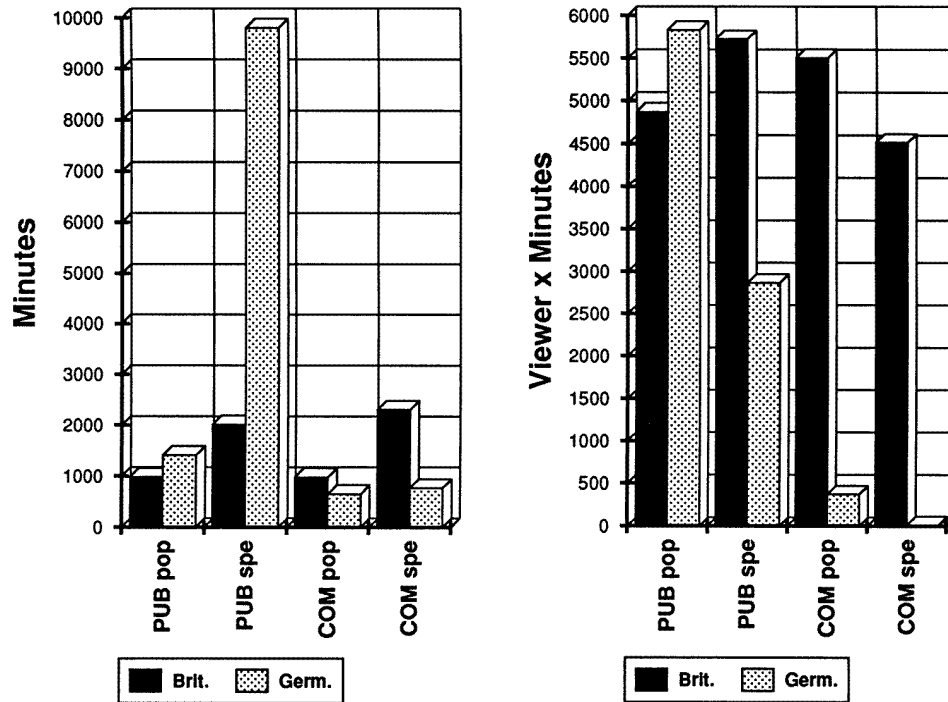


Figure 2. Where the 'real prime time' programmes are presented, and their audience share. In Britain the real prime time programmes (between 19.00 (17.00 on Sundays) and 23.00) are twice as likely to be presented on specialist channels as on popular channels. This applies more or less for both public and commercial channels. In Germany the vast majority of science reporting is presented on public, specialist channels. Commercial channels do comparatively little science reporting. However, despite being presented at the real prime time, these programmes reach different audiences. To examine that effect the number of minutes of running time (on the left-hand side of the figure) were multiplied with the number of viewers these programmes get (on the right-hand side of the figure). Loaded with the audience share, Britain shows a rather balanced picture. But the large number of specialist channels in Germany hardly achieve half of the audience share that public, popular channels reach. The potential of commercial channels is negligible.

output of science coverage in both countries, again separated into public vs. commercial and popular vs. specialist channels. The distribution for Britain is more balanced, and is different from that of Germany. The specialist channels—BBC2 and Channel 4—are doing more science reporting than BBC1 and ITV. But on the whole the amount of science reporting on the popular channels is quite remarkable. Even the entertainment-oriented ITV presents a considerable number of science programmes. The proportions are: BBC1 22 per cent, BBC2 32 per cent, ITV 17 per cent, and Channel 4 30 per cent.

The closer look at German channels and their programming strategies is even more illuminating. First, it is important to realize that about 80 per cent of science reporting on German TV is by public broadcasters. But secondly, and even more surprising, is the strong segregation of science coverage into the specialist (cultural) branch of the public sector. Nearly 90 per cent of public science coverage is by the specialist channels. Also remarkable is the fact that commercial, popular channels achieve more science coverage

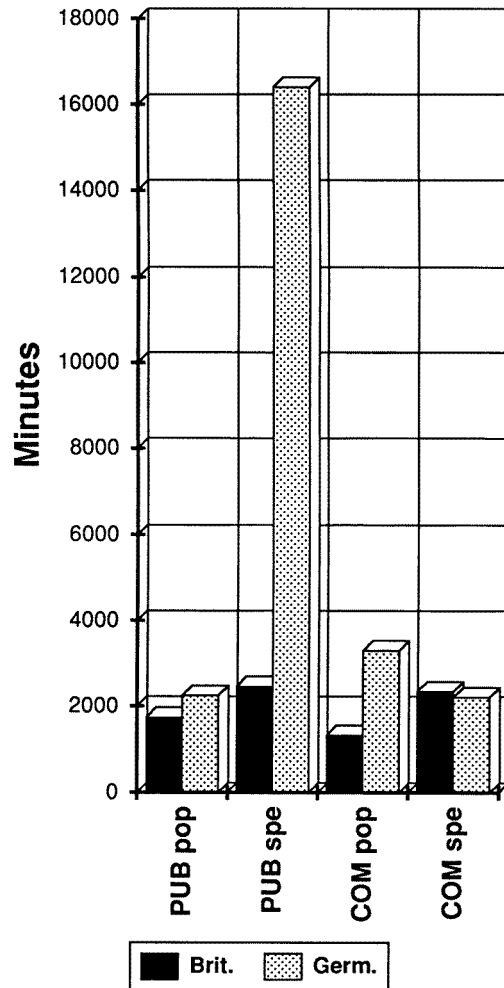


Figure 3. Who does science reporting in Britain and Germany? As in Figure 2, the distribution of the output of all science reporting is different in Britain and Germany. In Britain the allotment is more balanced. The specialist channels BBC2 and C4 do most science reporting, but even the commercial, popular ITV presents a substantial proportion of UK science coverage. In Germany the vast majority is scheduled in public, specialist channels, but commercial, popular channels do more science reporting than public, popular channels. However, as Figure 3 shows, they score few viewer-minutes.

than public, popular channels. But as Figure 2 shows, the large amount of science coverage by commercial, popular channels is not broadcast at the real prime times.

Figure 4 shows the details of German channels and their contribution to science reporting. First are the two public, popular channels ARD and ZDF. ZDF presents twice the amount presented by ARD, largely because ARD is affiliated to most of the specialist channels and shows all its more demanding programmes there.

Next come specialist channels on cable and satellite, such as 1plus, 3sat and arte. Shortly after this study 1plus, the cultural channel of ARD on cable and satellite, was cancelled:

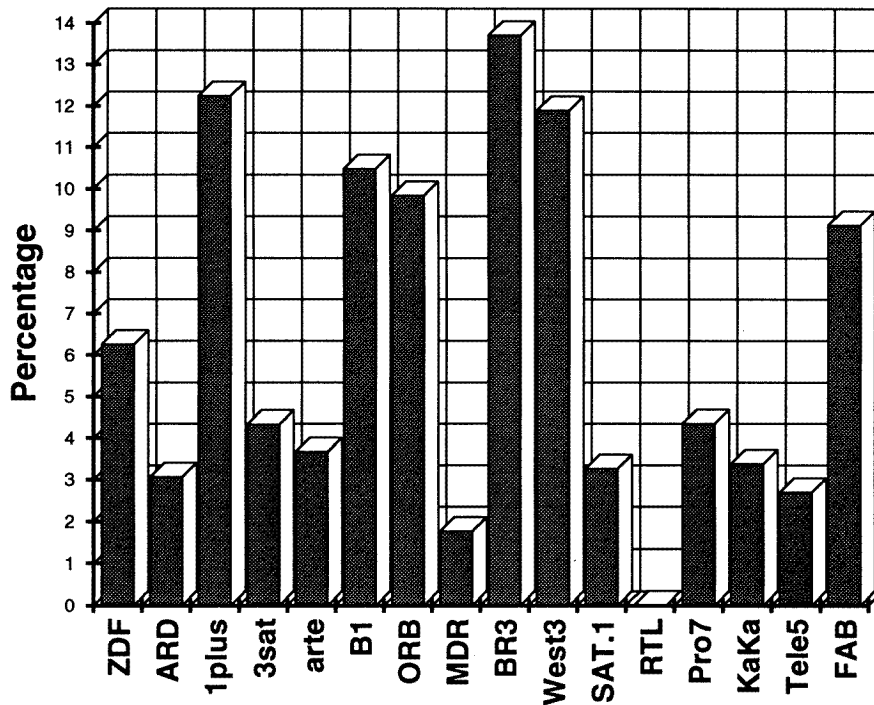


Figure 4. Who does science reporting in Germany? Most science programmes are shown on public channels. ZDF, the big nationwide public 'second channel', takes a rather high share, whereas ARD, the big, nationwide, public 'first channel', takes rather less. The public, specialist channels either on cable and satellite, like 1plus, 3sat and arte, or on the regional, terrestrial channels, the so-called 'third channels' like B1, ORB, MDR, BR3 and West3, present the vast majority of science coverage. There is only one channel among the commercial channels which does no science reporting at all: RTL.

ARD decided that its audience shares were too small and its costs too high. Since then ARD has contributed to 3sat, the cultural satellite channel of ZDF (in collaboration with German-speaking Switzerland and Austria). What is important here is that the cancellation of 1plus also meant the cancellation of 1plus' own science magazine and its high output of science coverage.

Next come the regional terrestrial channels, the so-called 'third channels', such as B1, ORB, MDR, BR3 and West3. The last two can also be reached via cable and satellite over most of Germany. These 'third channels' carry the major part of all science coverage on German TV.

Commercial channels play a minor role in science reporting. Nevertheless, the total amount is quite remarkable; but again, most of it is not at real peak times, and scores few viewer-minutes (see Figure 3). FAB is the only specialist commercial channel to produce any noteworthy output on science, medicine and technology; but since it is regional and on cable it achieves only a negligible audience share. The only channel that does no science reporting at all is the commercial RTL.

Programming strategies

The much more competitive TV market in Germany leads to a programming strategy which is highly distinctive. On the one hand, there are popular channels with few, mostly entertainment-oriented science programmes like nature shows; and on the other hand there are the specialist channels which broadcast an increasing number of traditional science programmes. This distinction is particularly sharp between the specialist and popular channels of the public sector broadcasters, which have to provide popular programmes in order to survive. As can be seen in the German case, public broadcasters have to show more feature films and light entertainment during peak times, and science programmes, as well as cultural programmes, are pushed away to the affiliated specialist channels.

It is on the specialist channels (the 'third channels') that the vast majority of science coverage can be found. And its scheduling seems to be excellent—at first glance. But in spite of being well placed in the schedules the science programmes are not watched by many people because of the entertaining programmes competing at the same time on other channels. There is also the problem of the image of the 'third channels': people tend to regard them as educational and even boring. An excellent science programme transmitted on one of the 'third channels' at peak time will not achieve as large an audience share as the same programme transmitted in the afternoon or at night on one of the popular channels.

British television producers also have to face a competitive market, though on a smaller scale than in Germany. Even the commercial, popular ITV system is producing about two thirds of the output of BBC1 and about half of the output of BBC2 or Channel 4.

In order to fascinate great shares of the audience the programmes have to be exciting and entertaining. This certainly is the case for the reporting of health and medicine. Germany still remains in the tradition of 'doctor's advice' programmes in the magazine format,¹² while Britain is developing the real-life drama ('reality TV'), which combines information and entertainment, but is still based on reality.

The implications of the multi-channel expansion

Britain still enjoys a splendid situation: four well-defined channels producing a range of programmes. But there are signs that things will change in Britain, too. Competition will increase dramatically as satellite and cable programmes play a more important role. Cable and satellite currently achieve no more than a five per cent audience share, but these figures will increase dramatically now that the satellite channel BSkyB has outbid ITV for exclusive rights to the Premier Football League, and the BBC has started a satellite channel for light entertainment.¹³ In a few years from now, the situation in Britain may be the same as in Germany today. As Paul Jackson (Carlton, ITV) pointed out: 'current affairs series in peak time on ITV should be dropped unless they achieve viewing figures of six, seven or eight million'.¹⁴

Ratings could become crude indicators of how much science programming the public is prepared to accept.¹⁵ It is this kind of thinking that is crucial for programme decisions in German television, and it may well soon be the same in Britain. The comparison of Germany and Britain demonstrates the shift in science programming and in scheduling policies. How do programme makers cope with this? I asked prominent science producers and editors about their strategies for future science reporting.¹⁶

Duncan Dallas used to be head of the Science Department of Yorkshire Television, an ITV company.¹⁷ During his leadership the department was regarded as one of the most innovative in science TV production.¹⁸ He now acts as a freelance producer and at the time

of my interview he was producing a science drama series called *Science Fiction*. So it is not surprising that he thinks drama could be an opportunity for future science reporting. But he also emphasizes the importance of a real-life orientation:

Science producers have to find a way out of the ghetto. The way out, I think, is the way of relating science to the rest of the culture. They have to look at where science crosses over. Let's say, science and the law, that's quite an interesting one, because in the law scientific evidence comes under cross examination. . . . In documentary programmes a lot of the feel of science is lost, the kind of gossip, the kind of undercurrents, the kind of the real arguments that we know as television producers. It's all revisited as a succession of interesting thoughts. There is a lot of detail in the stories that just gets missed out. We should think of stories as a way of reintroducing that, making science more like life and less like a laboratory. So, I think, everyone has to find a different method of doing it. Ours just now is drama.¹⁹ . . . I think science producers aren't trying very hard, actually. They're a real old-fashioned sort of pressure group: 'give us more money, we're important'. They're not showing any enterprise or real initiative or real change. If they were really interested in producing a generation ahead, they should make better programmes, make more interesting programmes. All television producers have to do to be popular is to look at the world around them and compare it with television. If there's something really happening outside, and it's not on TV, there's a real opportunity to do something.

David Filkin was head of the Science and Features Department of the BBC at the time of my interview. He does not see the future of science reporting in drama:²⁰

Maybe drama could be a very effective thing. We all know that *Life Story* [about the discovery of the DNA double helix] was a brilliant drama. But it was also expensive. I would do that kind of drama, if I could get someone to fund it. My personal view is, you have to be flexible. You have to be able to go in whatever direction the market allows. And we have to find new ways of doing things—that is always an ongoing challenge.

What is the future of science programming in Filkin's view? He looks to the American experience of ending up with some fifty separate channels. He argues that television has become more like a collection of magazines with special topics. Among them is the Discovery Channel, with most of its programmes devoted to science.²¹ In the end, Filkin expects two different strands in science reporting—one very popular and one very specialist:

It may be that you are going to have the skills and ability to hold a prime time show like *Tomorrow's World* on a main broadcast channel. I wouldn't want to give that up easily. Even if *Tomorrow's World* only produces a four-million audience while the soap-opera opposite is getting nearly twenty million. I would rather be on a main broadcast channel than not. Because people will bump into it. They won't expect science. They'll switch on because they think 'that is going to be interesting'. And if you can hold their attention, somebody who normally wouldn't be interested in science gets a taste of science. My belief is that a lot of small tastes add up to a little cultural shift. At the same time, I still want to make programmes for the very small minority of specialists who are knowledgeable. That means I want to do some programmes on a major broadcast network and some programmes for a very specialist network; and some exclusively for library sales. All of these things are possible in the long term future.

In Germany most popular and successful science reporting on TV is done by ZDF. Joachim Bublath, head of the Science Department, doesn't believe in drama either.²²

We did drama. The principle dilemma is how to present facts. To understand the scientific background you have to put all the explanations into the dialogues of actors. That's really difficult. We tried a combination of drama and documentary and presented the explanations before or afterwards. But that was not likely to be accepted by viewers. We had the same problem before when we used to have some appetizer in the programme first, and explanations later. That method did not work very well. So we did split our programmes: the very popular *Knoff-Hoff-Show* as an appetizer, including entertaining elements with only short animations for some explanations, and the more elucidating series *Abenteuer Forschung* with more background explanation.

Bublath likes to play in the highly competitive TV market. He would not favour special-interest channels devoted only to science:

For me, special-interest channels would mean giving up. Science is part of our general life. As long as we have popular TV channels watched by many people it is our challenge to get science out of the ghetto and to bring it into real life. Science needs to be observed and under scrutiny just like news, the arts or even sport. If it is regarded as only for specialists science will lose its power.

Not surprisingly, there are different ways in which science producers think they can cope with the implications of the multi-channel expansion. But none of them wants to give up presenting science on popular channels. Thus future television has to find new ways of exciting its public.

Conclusion

Two tendencies can be drawn from the reported results. First: science reporting will remain a domain of public broadcasters. But second: for programming strategies the important distinction will be between popular and specialist channels—regardless of whether those channels are public or commercial.

Competition will increase between the popular channels. Thus very popular programme formats will have to be developed even for science coverage. The live drama-documentary format is very successful in Britain, as are drama formats. But drama is very expensive, and often fails to hide its educational background—as Joachim Bublath pointed out. The *Knoff-Hoff-Show* on German TV is another very successful format, showing surprising experiments, funny inventions and spectacular effects. It has some similarities to *Tomorrow's World*, but focuses more on the entertaining and surprising effects than on scientific explanations as *Tomorrow's World* does. The invention of new popular programme formats are the main challenge for future science producing.

The other remaining question is: what will happen on the specialist channels, be they public or commercial? There is the possibility David Filkin envisaged: a further specialization of channels in a multi-channel expansion. In Germany, the digital satellite system is due to start in 1996/7, offering many new pay-TV and pay-per-view choices. But the number of channels will also increase: estimates range from 50 to 500 different channels. Will there still be a place for traditional science reporting?

The example of the American Discovery Channel among a superfluity of others shows that even that has to be entertaining: it mostly presents landscapes and animals. The

example of 1plus, the cancelled German cultural channel on cable and satellite, shows that at the end of the day, even in the public sector, economic figures count. But limiting science reporting to special-interest or science-only channels would probably lead science coverage back into the ghetto.

The other possibility was mentioned by Joachim Bublath as well as by Duncan Dallas: 'science as part of our life' or 'if there's something really happening outside, and it's not on TV, there's a real opportunity to do something.' This corresponds to another observation in current programming. A substantial proportion of science coverage is presented in political or current affairs programmes. So another conclusion for future science reporting could be that science reporting should be where it is important for viewers: in the news, in current affairs programmes, in economic, cultural, political or even scientific programmes—but without the label 'science programme'.

Acknowledgments

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- 3 Hansen, A., and Dickinson, R., 1992, Science coverage in the British mass media: media output and source input. *Communications*, **17**, 366; see also Hansen, A., 1992, What if there are multiple intentions? Journalistic practices and science coverage in the British press. Paper presented in the session 'Communicating scientific knowledge to the public: messages and agendas', Annual Meeting of the American Association for the Advancement of Science, Chicago, 6–11 February, p.3.
- 4 Seymour-Ure, C., 1991, *The British Press and Broadcasting since 1945* (Oxford: Blackwell), pp.144–158; actual figures from the *Financial Times*, 6 October 1992, pp.31–32.
- 5 Hansen, A., 1992, What if there are multiple intentions? Journalistic practices and science coverage in the British press. Paper presented in the session 'Communicating scientific knowledge to the public: messages and agendas', Annual Meeting of the American Association for the Advancement of Science, Chicago, 6–11 February, pp.3–5.
- 6 This scheme was slightly revised and proposed for further comparative studies in a researcher's conference at Dublin in 1995. It now counts eight categories since the category space with its subgroup 'space/technology' was included in the category 'technology', whereas its subgroups 'astronomy' and 'cosmology' now fall into the category 'pure science'.
- 7 For a critical review of the BBC's and ITV's reporting on health and medicine see Karpf, A., 1988, *Doctoring the Media: the Reporting of Health and Medicine* (London: Routledge), pp.9–71.
- 8 Willems, J., and Hanssen, L., 1993, Science and technology on TV: four European countries compared. *Communications*, **18**, 215–221.
- 9 Bernon-Gerth, A. M., 1991, La communication télévisuelle scientifique et technique, regard sur la production et la création en Grand-Bretagne et en France. Paper presented at the International Conference PCST, Madrid, 21–24 May.
- 10 Hansen, A., and Dickinson, R., 1992, Science coverage in the British mass media: media output and source input. *Communications*, **17**, 366–368.
- 11 This was the experience of colleagues and myself as a science producer on German TV for more than 15 years: the same programme when presented in the so-called 'third chain' got a smaller audience share than when it was broadcast in the so-called 'main channel', in spite of being scheduled at the same time slot.

- 12 For a detailed review of the German tradition of TV coverage of medicine see Merscheid, H., 1984, *Medizin im Fernsehen, Probleme massenmedial vermittelter Gesundheitsberichterstattung* (Bochum: Brockmeyer).
- 13 *Financial Times*, 6 October 1992, p.31.
- 14 *Guardian*, 4 January 1993, p.14.
- 15 Blumler, J. G., and Hoffmann-Riem, W., 1992, New roles for public television in Western Europe: challenges and prospects. *Journal of Communication*, **42**, 20–35.
- 16 For how members of the US television industry cope with the television marketplace, see Blumler, J. G., and Spicer, C. M., 1990, Prospects for creativity in the new television marketplace: evidence from programme-makers. *Journal of Communication*, **40**, 78–101.
- 17 Interview conducted on 19 October 1992. Actually, it was Dallas' last day in his office before he left the company. Due to new regulations in 1993, Yorkshire Television had to close its science department.
- 18 Programmes like *Don't ask me!* and *Where There's Life*; for more details on the latter see Karpf, A., 1988, *Doctoring the Media: the Reporting of Health and Medicine* (London: Routledge), pp.97–110.
- 19 For a critical analysis of presentation of science as television fiction see Banks, J., and Tankel, J. D., 1990, Science as fiction: technology in prime time television. *Critical Studies in Mass Communication*, **7**, 24–36; for the impact of dramatization of science see Hornig, S., 1990, Televisions's NOVA and the construction of scientific truth. *Critical Studies in Mass Communication*, **7**, 11–23; see also La Follette, M. C., 1982, Science on television: influences and strategies. *Daedalus*, **111**, 183–197.
- 20 Interview conducted 3 November 1992.
- 21 The US documentary channel Discovery is already available in the British cable network.
- 22 Interview conducted 29 May 1995.

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