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Comment

Science on air: the role of radio in science communication

Matteo Merzagora

The international symposium "Science on air: the role of radio in science communication" was held in Trieste on 1 and 2 October, 2004. To our knowledge, it is the first conference ever specifically held on science on radio, and it is certainly the first time science radio journalists, researchers, and media experts from 16 different countries met to discuss their journalistic practice and the role of radio in science communication. The main results are presented in this article.

Keywords: radio, science communication, media studies

Introduction

Detailed surveys such as the Eurobarometer show that European citizens love radio. In the field of science communication, radio ranks as the third source of information, figuring as the most reliable medium for 27% of the population in pre-enlargement European countries and for as much as 41% of the population in the new member-States. In addition, its popularity has not been affected by Internet, which is converting TV viewers, but not radio listeners. Europeans' screen time is saturated, there is no room left for more images, but there is still plenty for sounds; especially for the more discreet, controllable and personal sounds of radio. Compared to television, radio seems better to fulfill the need for more specific information, catering for a more diverse and heterogeneous audience, of which science lovers are a part.

For several decades, however, relatively little research has been done on radio, not only for a question of money (radio is of little economic interest) or because of the huge power of television (in spite of addressing a fraction of the population, it's a fact that radio still plays an important role in forming public opinion). Radio has not been studied because there is little new to say about it "in general". We believe, however, that there is still much to investigate and understand about "specific" aspects of radio: for instance, its potential as a vehicle for education, especially in developing or recently-developed countries, its role in the era of Internet-distributed music and audio material, the changes it will have to undergo as it inevitably converges with the web and so on. It is no coincidence that, in recent years, the media experts' interest in radio has grown again, as is also confirmed by the creation of networks of researchers at national (Radio Studies Network, in the UK) and European (IREN, International Radio Research Network) level.

Particularly, there seems to be a lot of interest today in studying radio and its contents. So, for instance, studying a music station in relation to the type of music that is being produced today and the new ways of enjoying it. In our case, we wish to analyse and assess radio's impact on, and contribution to, the development of science communication within society.

This is, in fact, the aim of the new European project called SCIRAB (Science in Radio Broadcasting). We will briefly comment on key concepts, background information, and aims of the project, and will then analyse the core ideas of one of the main events of the project, the symposium "Science on Air: the Role of Radio in Science Communication". Other contributions in this article, offered by participants to the symposium, will provide a better understanding of some of the many issues discussed during those two days. The proceedings will soon be available on the Net in PoS (Proceeding of Science, http://pos.sissa.it).

"Science on Air" also presented the results of a workshop held in Bucharest on 4 July, 2004, specifically focussing on scientific radio programmes in Eastern Europe. Useful indications were obtained for a second workshop, which was held in London on 27 November, 2004, concentrating specifically on relations between radio and the scientific community and on interactions between journalists and scientists. Detailed accounts of these meetings can be found on the project SCIRAB website: http://www.scienceonair.org .

The SCIRAB project – Science in Radio Broadcasting

SCIRAB is financed by the DG-Research of the European Union, and is part of the programme Science and Society. It is coordinated by the ICS group (Innovations in the Communication of Science), based at the SISSA (Trieste), and has two partners: the Master in Science at Imperial College (London), and Radio Romania's (Bucharest) Science Department. The programme, which started in January 2004 and will last one year, has the following main objectives:

- creating contacts between scientific radio programmes on European radios;
- analysing the role of radio in science communication;
- conferring a European dimension upon science communication on the radio;

which are to be achieved by:

- contacting European scientific radio programmes (and the people who make them: journalists, presenters, producers and scientists);
- drawing a "map" of these programmes and identifying their basic characteristics by means of questionnaires;
- carrying out research on their quality through semi-structured interviews with radio journalists;
- organizing two workshops and a symposium;
- identifying useful means to promote quality in scientific radio journalism;
- creating a permanent operative network.

At the time of writing, SCIRAB is still a work in progress. The identification of concrete ways of promoting useful exchange between scientific radio programmes in European countries and research on the role of radio in science communication both basically depend on gathering as much information as possible: from journalists, in the first place, but also from scientists, media experts, science communication experts and producers. In this phase, we rely on the speeches and debates taking place during the workshops, and the interviews with presenters and producers of European scientific radio programmes. The contributions presented in this article represent a sort of intermediate stage which will, hopefully, help finding elements to broaden the discussion and stimulate new ideas.

Science on the radio: preliminary remarks

SCIRAB was created on the basis of two very simple assumptions: first, the people who work in scientific radio programmes – journalists, producers, presenters and scientists – know nothing about their counterparts in other European countries; second, no in-depth studies on science communication on radio are available (an exhaustive, but inevitably meagre bibliography can be found at http://www.scienceonair.org/biblio.htm). There is a major gap, both practical and theoretical.

As for the first point, lack of contact between colleagues, the reasons are mainly of a practical nature: the obvious language barrier. But there are also difficulties at a technical level: with the exception of large international networks broadcasting in short wave, up until a few years ago, if you wanted to listen to another country's radio programme, you either had to be in that country or ask the radio to send you the recordings. Luckily, today things are changing: nearly all radio stations broadcast live on Internet, and many of them keep well organized archives, making it possible for journalists to listen to a programme at virtually any time, provided they have a decent understanding of the language. Another

reason for this lack of contact is the very little attention that used to be paid to radio at information experts' meetings. This, too, has changed and radio journalism, both generic and scientific, has reappeared on their agenda.

The second point, a virtually total lack of studies, is partly a consequence of the first, and partly due to the greater attention that has been paid to television since the 50's. But this too is changing. Today people are paying more attention to the ways science enters their lives: the relations between science and society have evolved and everybody is aware of the role scientific issues play in the democratic and governance-driven resolution of controversies. In this sense, radio is a medium that can't be ignored, as confirmed by studies presented at the Trieste symposium by Patrick Vittet-Philippe, Press and information officer at the DG-Research of the European Commission.

It is possible to suggest an even more radical thesis: owing to its characteristics, radio could be strategic in promoting dialogue between science and society. If, as several studies have recently pointed out, today's challenge for science communication is promoting public participation and developing an informed, constructive and democratic criticism of scientific research, then radio can be of great utility. Compared to other media, radio can easily establish contact between the listener's personal experience (both practical and cultural) and the world of scientific knowledge. Unlike written media, radio allows the audience to hear the voice of the protagonists, thus creating a more intimate connection with the world of science and it is able to show the motivations behind the scientists' work. Compared to television, radio is a lighter medium, with a more relaxed and reflective tempo, and the barrier separating the listener from journalists and scientists is less impenetrable. The stereotyped and standardized roles so frequent on television couldn't work on radio: we create our own opinion of the scientist we are listening to, basing it on his, or her, style and on what he or she is saying. This is why people trust radio so much: scientists who are being interviewed are personally responsible for their own image and can be judged by it. They cannot hide behind their expertise and, at the same time, they can use their knowledge to convince the public of the interest, relevance and usefulness of their work.

In brief, radio is so effective in communicating science because it relies on a very familiar mode of communication: conversation.

The symposium "Science on Air": an overview

The project SCIRAB relied on what is called "action research", otherwise known as the "reflective practitioner's approach". It meant letting analyses, and their political consequences, emerge directly from the very practice of running a science radio programme.

The international symposium "Science on Air" was organized to enable European professionals to share their experiences and needs, with the precise aim of finding practical ways of improving scientific radio journalism and, at the same time, gathering useful suggestions for researchers in this field. 23 journalists from 16 different countries took part in the symposium, all producers or presenters of radio programmes on science.[1] In addition, several radio experts were present, bringing the media studies' view into the discussion.[2] The public included journalists, scientists and students, who all made positive contributions to the debate.

According to what has emerged from the discussions, all radio journalists share many characteristics, but there are differences, concerning both the use of scientific information and the use of radio. These issues will be dealt with in a special report to be written after the end of the project; the papers in this article concentrate on specific elements of science communication through radio. However, some general trends deserving brief description have emerged.

First of all, everybody seems to be trying to understand what being a scientific journalist means in a medium combining information with entertainment and education. Are we champions of science? Are we here to entertain or to inform? Are we allowed to educate? Considering the complex interactions between science and society, are radio programmes to be considered observation points, "drive belts", interfaces or discussion arenas?

Knowing the profiles of those who listen to scientific radio programmes also seems to be a common concern. Usually, journalists and radio stations have no information on their audience, or, at best, they know the approximate number of listeners per time-band, with no further detail. Only Switzerland has

devised a way to collect very detailed descriptions of listeners of every single programme: results show that scientific programmes have high scores, and that the profile of their listeners matches that of the average listener (thus confuting the cliché whereby science only attracts listeners with above-average education).

In some countries, specific surveys have shown that there is a demand for programmes on science. In Sweden, for instance, four consecutive surveys showed results of this kind and convinced the local radio to increase the time dedicated to science. Furthermore, this kind of data can be used to convince colleagues working in other sections of the editorial department of the importance of having a good coverage of scientific news which, in turn, means higher information quality.

Another central issue is what type of radio broadcasts science programmes. A preliminary survey has shown that most science programmes are broadcast on "cultural" radios (*Radio3* in Italy, *France Culture* in France, BBC4 in the UK), as was later confirmed during the symposium. Stations with missions other than culture do not have in their listings programmes specifically dedicated to science and do not have on their staff a "science journalist" in the strict sense. But this does not mean that they never talk about science: scientific information often fits into programmes of other kinds, without necessarily being labelled as science. This is a fundamental problem for surveys which have a very wide range, such as the one carried out for the SCIRAB project, which makes it impossible to identify and assess this type of programmes. A specific study regarding this issue would be interesting, though difficult to carry out at a European level.

Another point that emerged from the discussion is that those who work for a news radio have to face problems of a different kind than those working for a radio with science programmes, which strongly affects relations with senior members of the staff, so that a journalist working on a piece of news usually has to convince his chief editor and director that the news is worth being broadcast. Science is not perceived as sexy, interesting or charming, and important news has to struggle for space. The situation is different in dedicated scientific programmes, in which the "fight" is about getting a decent position in the programme listings. Once this is obtained, however, journalists are usually free to decide on the contents and follow their own editorial line without being accountable to the director. A different opinion, though, was given by Martin Redfern, of the BBC, who complained about having to be "commissioned", that is having to sell every single programme to the radio he works for. He claims that, thus, a complex and competitive procedure is set off whereby BBC journalists have to decide the contents of a programme many months before it is broadcast.

Different opinions have also emerged on other issues related to science on European radios: coverage of science conferences, new ways of using the web to make audio material available and to interact with the audience, the use of phone-ins, the use of games and quiz to increase the public's participation, etc.

One of the objectives of "Science on air" was that of promoting a more international approach to science programmes, since in most of them only national scientists are interviewed. The language barrier is the main reason, but a lack of human and economic resources also makes it difficult to reach foreign scientists. This is seen as limitating by all participants, who point out that for the most common European languages, finding a scientist who can speak it decently is not hard. In other cases, a translation wouldn't necessarily be perceived as disturbing by listeners, provided there is a concrete reason for having the voice of that person in the final version of the interview (for example, because he is the main author of an important discovery or experiment). Finding ways and incentives to convince journalists to make that extra effort would be very useful.

Some participants have underlined the need to combine different media in one product, with a more creative use of the web pages already accompanying radio programmes. However, developing a web page requires resources. In most cases, attractive, effective and regularly updated web pages are more the result of journalists' personal efforts than a precise editorial choice.

It is interesting to note that in some countries of Eastern Europe, both EU-members and candidates, science is seen as closely connected to the old regimes and is not supported, sometimes it is even opposed, by radios. In addition, national research programmes have suffered from a drastic drop in public funding, making it more difficult to find scientists willing to act as spokespersons.

Another issue discussed during the meeting is the possibility of having radios to collaborate on three different levels: exchange of ideas, exchange of audio material, co-production. All participants seemed enthusiastic about sharing ideas, best practices, formats, etc. The symposium itself was considered very

interesting in this sense and everybody wished there to be more opportunities of this kind. Exchange of raw audio material (for example unedited interviews), on the contrary, received contrasting opinions. Some stressed the benefits that could derive from it, specially for small radios; others pointed out that between a journalist and a scientist there is often a relationship of mutual trust which could be spoilt by misuse of that scientist's voice by a different radio. Furthermore, different radios and journalists have different styles and it could be difficult to re-use an interview originally designed for a particular programme. Exchange of audio material, though, could work if carried out with a "light co-production". In other words, in order to use the same interview on different European radios, preliminary agreements must be reached on style, aims and intended use of the interview. The planning of more complex procedures of co-production was also judged positively. The SCIRAB network could play a central role here. As for the interface for exchanging audio files, AthenaWeb, the European portal for the exchange of audiovisual material on Internet, was deemed sufficient in relation to our needs.

Many programmes, in particular documentaries and detailed reportages, often need the sounds of science to give colour and impact to what they are communicating. An archive of these sounds would be an interesting and useful tool and could be a part of the AthenaWeb portal. Research institutes should be encouraged to provide radio journalists with audio files, in the same way as photographic material, which press offices or researchers regularly provide for the media.

The symposium "Science on Air": four emblematic contributions

An element present in all discussions about the practice of science communication is whether science journalism and science communication have a specific and definite status within journalism and communication in general. In the same way, media experts ask themselves if, among all the media of mass communication, radio still has particular aspects worth analysing. Our answer to both questions is yes. Science communication on the radio still presents distinctive elements, both if the emphasis is on the term "science", and if it is on the term "radio".

The first of the comments collected is in the area of the media studies: Enrico Menduni well describes the present situation of research on radio. As stated earlier, this kind of research involves a smaller number of people today than in the "golden years" of radio, but it is in no way declining. Knowing the state of the art of "radio studies" is a key element to understand scientific radio communication in Europe.

Blanka Jergovic's contribution connects the theoretical aspects, regarding science communication and media studies with the practical sides of scientific radio journalism, which directly affect all the people at "Science on Air". Being from Croatia, a country which is about to become part of the EU, but which already largely shares Europe's history and culture, Blanka underpins the importance for journalists to understand how the role of science communication in society is changing, thus becoming more aware of the impact of their work.

Martin Redfern describes in detail what it is like for a science journalist to work in Great Britain, a country culturally closer to the U.S. than to Europe. The abundance of means and resources, on the one hand, and the constant and fierce competition for having one's programme commissioned, on the other, are at the same time attractive and frightening. Understanding of this situation is important to understand how this job will evolve.

Another issue discussed was whether radio has to simply inform the public or to educate it. A not entirely new question, but one that is still far from being answered, also considering the different ways it has been approached within and outside Europe. On the one hand, European journalists, with some differences between West and East, believe that their programmes cannot aim at educating the public, a task which must remain a prerogative of the school. On the other hand, experiences in other parts of the world show the radio's incredible potential for education. For instance, Bhaumik Thakar and Abhay Kothary described how the collaboration of the Manthan Educational Programme Society with All Indian Radio allowed the creation of a number of extensive projects aimed at taking basic scientific knowledge to Indian children living in rural areas.

During its first months of existence, the project SCIRAB has revealed the great variety of approaches, styles, practices and objectives characterising the European radios involved with science, as well as the

great utility of combining the daily practice of journalists with the theory of academics to understand the new social role of science communication. We hope that these contributions – as well as those published in the proceedings of the second Italian Conference on Science Communication –[3] will help promoting new initiatives and ideas on science communication on the radio.

Translated by Andrea Cavatorti, Scuola Superiore di Lingue Moderne per Interpreti e Traduttori, Trieste, Italy.

Notes and references

[1] The following science radio journalist have participated: Martin Redfern and Gareth Mitchell, BBC Radio (UK); Luca Tancredi Barone, *Radio 3 Scienza*, Rai Radio 3 (Italy); Sylvie Coyaud and Matteo Merzagora, *Il volo delle Oche*, Radio 24 (Italy); Elisabetta Tola, Radio Città del Capo (Italy); Ella McSweeney, *Future Tense*, RTE Radio 1 (Ireland); Jan-Olov Johansson, Swedish Science Radio (Sweden); Gerd Pasch, *Forschung Aktuell*, Deutschlandfunk (Germany); Blanka Jergovic, Science unit, Croatian Radio (Croatia); Enrique Diaz Leon, *El Observatorio*, Canal Sur Radio (Spain); Laura Durnford, *The Research File*, Radio Netherlands (The Netherlands); Akos Gozon, Editor in chief, Hungarian Radio (Hungary); Sophie Becherel, France Inter (France); Christian Heuss and Mark Livingston, Schweizer Radio DRS (Switzerland); Corina Negrea/Dan Stoica, Radio Romania (Romania); Maria Dimitrova, Radio Bulgaria (Bulgaria); Marina Astvatsatourian, science analyst, Radio Echo of Moscow (Russia).

[2] Views on media studies, research on science communication and scientific research were provided by: Enrico Menduni (Università di Siena), Patrick Vittet-Philippe (DG-Research, EC), Nicoletta Verna (Mediasfera), Michela Fiaschi (Facoltà di Frequenza, Università di Siena), Jacques Mehler (SISSA and CNRS), Marzia Mazzonetto, Matteo Merzagora and Elisabetta Tola (SISSA – ICS), with extra contributions by Stefano Fantoni (SISSA), Fabio Pagan (ICTP).

[3] N. Pitrelli, G. Sturloni (eds.), *La comunicazione della scienza. Atti del I e II convegno nazionale*, Zadigroma editore, Roma, 2004, p. 285-324.

Author

MATTEO MERZAGORA, after few years of scientific research in radiation biophysics, studied science communication at SISSA, Trieste, where he currently teaches science communication in museums and is responsible of the research sector on science in radio broadcasting, and person in charge of the SCIRAB project. For about 10 years he was producer and presenter, together with Sylvie Coyaud, of the weekly science radio programme *Il ciclotrone* at Radio Popolare, then in 2000-2002 of the daily *Le Oche di Lorenz* at RAI - Radio 3 and is presently contributor to the daily programme *Il volo delle Oche*, Radio 24. He is regular contributor of *Il Sole 24 Ore*, *Science & vie*, and free lance contributor to several newspapers and magazines. He has published with Sylvie Coyaud, *Guida ai musei della scienza in Europa* (Clup guide, UTET, Torino, 1999) and with Federico Pedrocchi, *Dove vanno le macchine* (Ed. Le Vespe, Milano 2000, libro + CD ROM). He has been coordinator of science exhibitions, such as *Energia* 2001 in Trento, and has co-organised several editions of the science film festival *Vedere la scienza.* He lives in Paris, where during last year has been working at CNRS Image/Media on a European project on science in TV Drama. merzagora@libero.it