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## **Two Cultures and the Third One: The Natural Sciences and the Humanities in Media Communication – Based on the Experiences of ENCOMPASS**

### **THE MEETING POINT OF SCIENCE AND THE MEDIA**

The variety of scientific themes tends to give rise to the probing of a proposed paradigm in as many fields as possible, resulting in a sometimes creative, sometimes apparently redundant production of letters. The theme of the ‘two cultures’ lends itself especially easily to fallacious connections – thereby fostering the survival of an approach that has no significant impact in itself on either science history or cultural history.

Still, it seems reasonable to consider the differences in the media presence of natural and social sciences a relevant issue. First of all, there is a very simple reason for this: namely, that the ENCOMPASS program, which offers a sufficiently large and high quality sample, sheds light on a striking difference in the public interest and media impact elicited by these science departments. What makes this phenomenon even more interesting is that the natural sciences attract significantly greater interest, which contradicts the extremely biased attitude of Hungarian media culture, which favors the literary discipline and the humanities.

The present study analyses the past four years of ENCOMPASS as a case study of the meeting point of science and the media. In the first place, this is justified by the fact that the program itself is a specifically media oriented initiative, with the aspects of mediability being decisive factors in its design, operation and impact analysis. Naturally, this received repeated criticism within the scientific community, and a comprehensive response to this criticism may serve as an informative presentation of the media impact.

Whether it is justified to consider performances in the context of communication with the lay audience with any serious weight when assessing the value of scientific activities is by far not evident on first sight, especially if we think of the institutionalised roles of scientists in the 19th and 20th centuries. Of course there have always been star scientists, but apart from a small number of uncontested professional authorities (such as Einstein, the Curie couple, Dawkins), they were at best simply classified as exhibitionists, with the tolerance that is the share of those who make a detour from the world of science.

During the past two or three decades, the world of research in developed economies has seen an increase in the significance of medialisation in research management and the social positioning of researches<sup>1</sup>. This means that a scientific institution or a research-

<sup>1</sup> This topic is elaborated in more detail in FÁBRI 2002.

oriented scientist can no longer afford to avoid media presence, because they need to justify the value of their activities through the channel that tends to monopolise the provision of information to decision makers – that is, in the mass media – in order to obtain funds and gain social approval and support for their activities<sup>2</sup>. The system of science institutions has responded to this expectation with the reinforcement of the *Public Understanding of Science*<sup>3</sup>.

The academic initiative for launching ENCOMPASS was based on this same idea: the theoretic consideration and practical enforcement of the effects of meeting new presentation and orientation forms. The former took shape in the research that the Academy member Kristóf Nyíri encouraged, the forms of media presence he created, the reformation of the encyclopedic nature of science, and its presentation in the form of the Hungarian Virtual Encyclopaedia<sup>4</sup>. Studies of the impact of info-communication tools, run by the Institute for Philosophical Research of the Hungarian Academy of Sciences for a long time, have explored the effects of the use of the Internet and mobile phones in the first place, but when ENCOMPASS was created, the main focus shifted to the mass media, with a special emphasis on television.

If we look at the characteristics of television culture, focusing on the efficiency and success of the media presence of scientific content, the primary factor that constitutes a challenge calling for change in the imagery of science presentations is the dependence of visual culture on trends. Moreover, producer interests and fashion trends are blurred in this context, which means that visual expectations, which can only be set for science communication culture with severe moderation, require even more reserve here.

The characteristics of the Hungarian media industry<sup>5</sup> are also decisive factors shaping the framework of science representations. The media environment of the audience is becoming full-fledged, and the amount of time spent watching television is not decreasing at all in the population (although an interesting and promising tendency is that especially young intellectual/manager groups tend to reject the current media supply). This entails the concentration of the media market, that is, the concentration of owner/decision maker positions. The competition spiral shows a definite descent: in shaping their supply, competing channels bid lower and lower in quality and standards as well as originality (and this no longer takes place in the old contesting scene of elite versus mass culture, instead, it happens within mass culture itself – the unspeakable television broadcasting of the football world championship in the summer of 2006 being a scandalous example of this). Finally, speaking about competition, the actual ‘scam show’ of Hungarian TV channels is the absence of real variety, the uneven availability/accessibility, and a market dominated by the program policies of the two commercial channels, which embarrassingly lack substantive alternatives. Two factors might be able to counterbalance this in media culture – however, public service television channels that used to play a role in moderating the competition have somehow dropped out of the circle of weighty competitors, whereas the ‘primitive accumulation of television capital’ has remained free from professional ties, whether we consider program makers or those in control of the business.

<sup>2</sup> For the role of the media in obtaining information on sciences, see: EUROBAROMETER 2003 and 2005.

<sup>3</sup> For a more detailed description of the process, see: MOSONINÉ FRIED – TOLNAI 2005.

<sup>4</sup> NYÍRI 2003, and its implementation: [www.enc.hu](http://www.enc.hu).

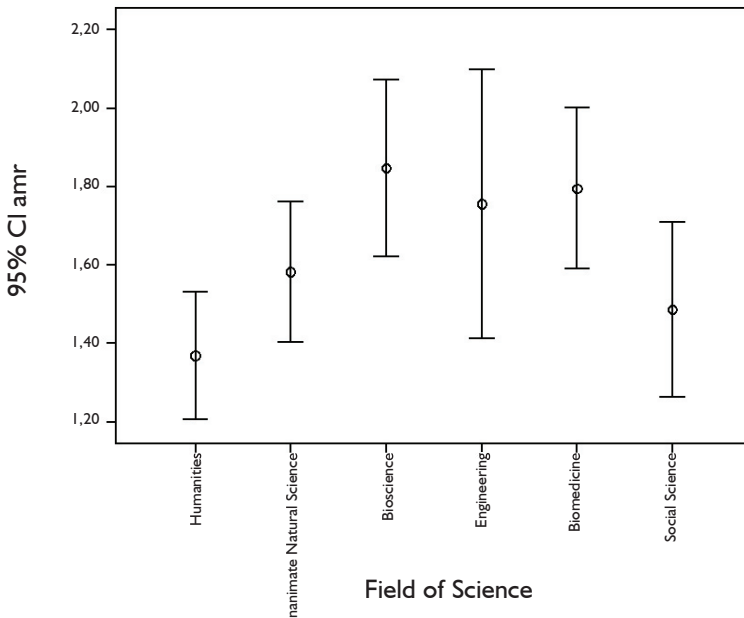
<sup>5</sup> In the following passage, I also rely on the research results and publications of the Communication Theory Research Team of the Hungarian Academy of Sciences and Eötvös Loránd University.

If digital television technology gains space, it might offer a perspective for scientific content. With the multiplication of bandwidths and interactive solutions presuming and socialising a more conscious viewer, it can give a chance to value oriented content – however, this is not the present of ENCOMPASS to be analysed here as yet, just a possible way of carrying on (a prospect that is not so glorious as the future of television is seen by certain media theorists, if we look at the aspects of social cohesion and value orientation).

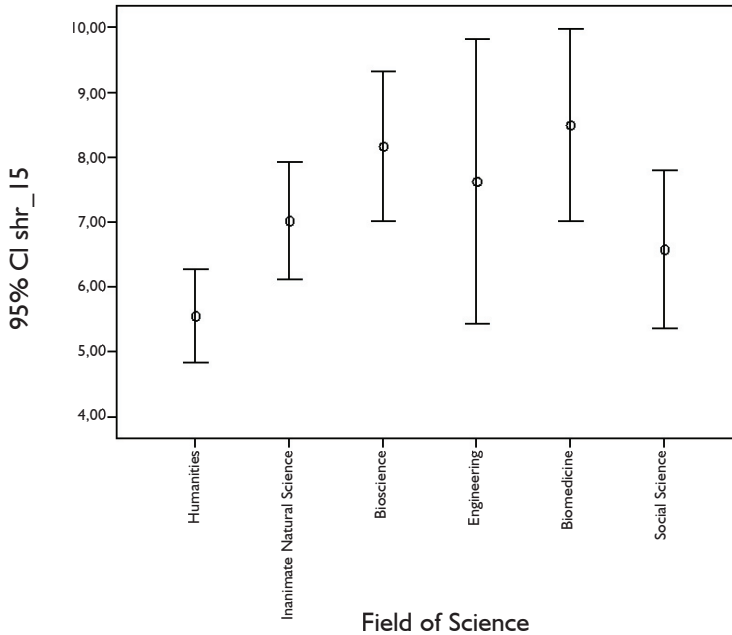
The interference of media givens and scientific content provision inevitably called ENCOMPASS for the development of science communication solutions that differ significantly from what was common in either the natural or the social sciences. This was why the unified treatment of scientific fields seemed more simple, and this makes the different experiences easy to compare today.

Differences are prevalent as early as the preparatory phase of work with the lectures. The illustration material is of outstanding importance to the production, and its distribution in absolute numbers exceeds the thematic ratio, with the difference being even more marked if we look at the qualitative aspect: the vast majority of illustrations considered significant belongs to the natural science lectures. Although not based on exact data, the greater sensitivity of lecturers in the natural sciences to elements making the presentation more lively, more enjoyable to watch and more metaphoric is an uncontested observation. The same pattern is repeated in the focus group and questionnaire based viewer surveys: the popularity and acknowledgement of lectures in biomedicine, molecular chemistry and technology exceeds by far that of the human or social science lectures.

This difference is even more marked in figures of television ratings. We have compared mean ratings and audience ratios with one-way analysis of variance<sup>6</sup>. We first give the mean rating figures of the different scientific fields, supplemented with the confidence intervals indicating the deviation of data (CL=95%).



<sup>6</sup> The analysis was done by Károly Bozsonyi media researcher, based on the assignment of ENCOMPASS/ Mindetudás Egyeteme non-profit partnership.



The ANOVA analysis we carried out has revealed significant differences both in the total number of viewers (AMR) and for those watching television at the time (SHaRe). This means that the difference of mean data for certain science fields is larger than random error, indicating a systematic difference between them. Posterior analysis has shown that the significant differences result from the significantly lower mean results of the humanities compared to medical and life sciences. A similarly telling piece of information is that among the twenty highest rating lectures of ENCOMPASS, there is only one from the humanities.

There are further indicators of the difference between science departments. One of these is the extent of interest on behalf of professionals. An ENCOMPASS lecture is also a representation of the profession, and representatives of the given science field and the related institutions participate in the lectures in great numbers (and evidently not to acquire knowledge, but motivated by interest in the work of fellow scientists). As testified by registrations and attendance sheets, this is much more typical in the case of natural scientists, while the attendance of professionals is especially low in the humanities, and it is below average even in the social sciences. The extent of the interdisciplinary openness of lecturers also implies a difference in the cultures of science departments. Nearly all of the lectures in the natural sciences incorporated a human or social perspective in the presentation (an outlook on implications within the natural sciences being a standard element), whereas the same was rare on the other side.

Based on the experiences of ENCOMPASS, we find significant differences in the

representation of natural and social sciences in the context of media culture. I will argue that a sufficient explanation for this is provided by science political and science sociological factors. However, all this offers us an opportunity to articulate some hypotheses for science theory without the need to violate the principle of Occam's razor, or to employ any kind of forced argument – hypotheses that have the potential to help us explore the significance of science communication.

By science policy I mean the aspects that make sense to the communal positions of science. The most important among these is the nature of the image of literacy and media reception in Hungary. I have mentioned the role of literary traditions before. In line with this, knowledge of the fields of literature, the mother tongue or history is considered to be a more integral part of general education<sup>7</sup> than knowledge about nature, the natural sciences, and technical innovations. In other words: it is seen as a sign of gross illiteracy if someone does not know who is the author of the '*National Song*', whereas reassuring pats on the shoulder follow if someone admits that he/she has no idea of Ohm's Law, or has always been bad in math. Yet why would this biased image of education be so evident? Whether we consider the function of the image of education to be the creation of identities, its utility or the acquisition of knowledge about the world, the dominance of the knowledge of humanities is not given ab ovo. Rather, its origins are very specifically found in political and social history, and its prevalence is linked to well-defined group interests and ideological positions.

All this takes an even more extreme form in the thematic composition of media content. Paralytic ignorance and lack of affinity to scientific knowledge is even more stunning if we compare it to the preferences of media consumers. Surveys have shown that the population of Hungary is particularly responsive to scientific themes, and it is the natural sciences that enjoy significantly higher popularity. At the same time, the flow of television programs dominating common talk and the agenda of community issues is largely centered around a small number of themes from the social sciences. It is the opinion of the social scientist that matters in the eyes of the media – and meanwhile, a larger proportion of the audience tends to seek answers to scientific or technical problems.

The contradiction also sheds light on the limits of the literacy of media workers, but, more importantly to our present topic, it influences the presentation opportunities of scientific themes. If we look at the program structure and the observations made in managing scientific television programs and themes, we find that representatives of the natural sciences are in an obvious minority. In other words: apart from a few exceptions (among which I would mention Delta, a program with decades-long traditions), there are hardly any contact points between these two cultures in Hungarian television broadcasting. Thus there is hardly any traceable impact of one on the other. All this has entailed the artificially generated frustration of viewer demand, which has understandably led to increased expectations of lectures in the natural sciences.

Another element of the media impact leads us to science sociology, that is, factors within scientific operation. As a consequence of this media environment, the standards set for social scientific performance are much less stimulating. The intertwining relations with the so-called media elite allow more space for informal outcomes lacking in

<sup>7</sup> For an overview of changes in the image of literacy, see: SÁSKA, G. *Élet és Irodalom*, 1 February 2002.

professional approaches (and based on ideologies rooted in group identity or depending on fashion instead) than is the case in natural sciences, not so embedded in the world of media.

The dynamics of performance assessment within sciences probably determines the differences observed between scientific media productions of ENCOMPASS in a more general sense. Presentation requirements and standards beyond the narrower institutional-professional scene (and especially at international level) have been a natural part of daily research activities in the natural sciences for a long time. Although it would be needless to wrap the latter in the illusion of absolute objective value judgements, it is certainly true that the pressure to be up to requirements outside their own circles of reference can have a very stimulating effect on 'performances'.

In sum, a sufficient explanation for the salient difference of the 'two cultures' in one of the most effective programs of scientific knowledge transfer, the ENCOMPASS lectures, lies in basically external and sociological factors of the cultivation of science, such as the socialisation of scientists and the nature of the media environment. On the other hand, the reverse side of this thesis demonstrates that they are fundamentally identical: a number of excellent and perfectly mediable lectures in the humanities that have attained great audience success exemplify the disciplinary independence of scientific knowledge and knowledge conveyance.

This is a lucky state of affairs: among the basic objectives of ENCOMPASS articulated earlier, the first one has been to demonstrate and attain the unity and encyclopedic nature of science. In support of this, we have articulated a clear-cut science philosophical standpoint in the intellectual workshop of ENCOMPASS: in the face of a postmodern and science-skeptical mainstream, it is scientific rationality composed of the elements of network-based scientific organisation, communicable research and academic pursuit aspiring for truth value that can be a viable course of intellectual activities. In this sense, an intended result of the program for several members of the crew is the conservative revolution of scientific communication: the reformation of the complex of authority, rationality and unity<sup>8</sup>.

The media strategy of ENCOMPASS is built on the same approach: full scale media presence will be given to conservative content developed with meritocratic principles, and this will be realised with competitive media technology – at the same time, we shall replace the one-dimensional media standard, and instead of the mystification of mass ratings, we shall consider the audience a multi-dimensional, divided reference context. In this media program, the own value of the person (the performing scientist) is not only an inconvenience to tolerate, but one of the most important attributes of the 'product', requiring a different program making process from the very beginning. The genre is shaped by the principle of conservative values and the dynamics yielded by mediable presentation, which also reflects our perception of the characteristics of scientific knowledge. Accordingly, the central role of the concept of authority in acquiring knowledge permeates the interpretation of relations between information and knowledge, the acquisition of information and the organisation of knowledge. In turn,

<sup>8</sup> For a more detailed treatment of this theme, see: FÁBRI 2005.

the requirement of authenticity and the role of cognitive schemes can be generalised to include the acts of creating and communicating scientific knowledge.

Thus science communication is a necessity and an opportunity at the same time<sup>9</sup>: the radical transformation of the relationship between science and lay people not only retroacts against science extrinsically, but, among other things, it also enables the reconstruction of the unity of science departments, with the tool kit of medialisisation and info-communication. Taking advantage of the properties of digital space in innovative ways of linking elements of knowledge opens up new ways for inter- and multidisciplinary enquiries and interpretations. User friendly realisation not only helps unprofessional orientation, but also shapes and stimulates scientist approaches. The power of media demands to homogenise also drives scientists towards each other. Finally, the fact that various scientific attitudes are presented under a unified brand inevitably inspires the establishment of an order.

Network organisation in scientific research has by now become the most appropriate form of science organisation, which supports the etherealization of (historic or artificial, but apparently forced) boundaries of scientific fields from the management side. It is not easy to transcend disciplinary divisions enforced by many kinds of organisational interests – this can be promoted by the claim for communication in that it fosters the meeting of personal affinities and science political resolutions at the right time. If this communication can enforce a joint realm of values for natural and social sciences, the message of the unity of science will be heard outside as well as inside the world of science.

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<sup>9</sup> We are preparing a training course and a university program aiming at the dissemination of science communication skills with the support of the Hungarian Academy of Sciences