

The New Media Strategy of Science

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In my lecture I'm going to talk about a specific project and theoretical approaches to the new *media-strategy* of science, and on the basis of that, I will make proposals for the strategy of science with relation to the *New Media*. But before that, I will try to draw your attention to the relationship between media and science and give a summary of the social perception of science.

The central message of this lecture is based on empirical research, theoretical analysis and practical experiences, and states that ***classical, autonomous, truth-oriented science has real chances for competitive communication in the age of new media and new media use***. This means that ***we need not surrender the traditional values of science to the new fashions of the communication industry***. Before offering my arguments, I would like to make ***my personal position*** clear on this question. This issue is important for scientists as well as for society because of the traditional moral and technical values of scientific life and scientific work. ***This moral and values form the basis of western culture, the culture which is the best and most convenient culture for us.***

(Here I have to refer to a specialty of my background: I have made personal contribution to practical science communication working as the head of communication of the Hungarian Academy of Sciences and as the scientific director of Encompass. Of course, I don't think I could be an impartial, disinterested observer myself – but I hope the data, quotes and theses of my lecture will demonstrate sufficient objectivity in my work.)

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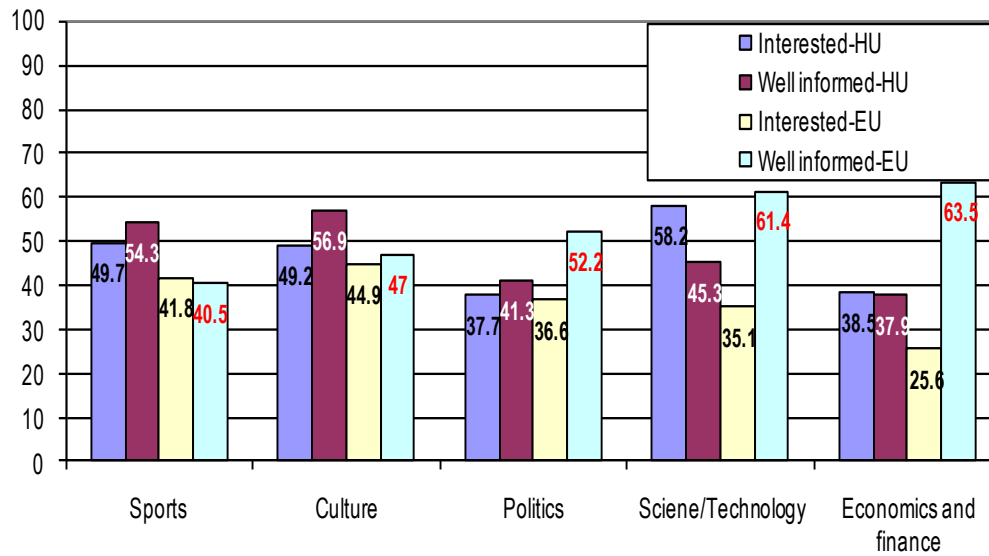
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I. What we know about the image and position of science in society?

We know from Moscovici: “Science was before based on common sense and has made common sense less common; now common sense is science become common”. (MOSCOVICI 1984. 29.) This general statement shows the importance of science in social perception – and there are a lot of specific surveys about the facts of this phenomenon.

First, you can see the comparative results of two surveys: the Eurobarometer by Gallup from 2002, and my own research in 2004. Science and technology came in second on the level of interest scale, but only fourth on the level of information scale. Hungarian data show that although the general level of interest is lower, interest in science is 23 percent higher than in the EU.

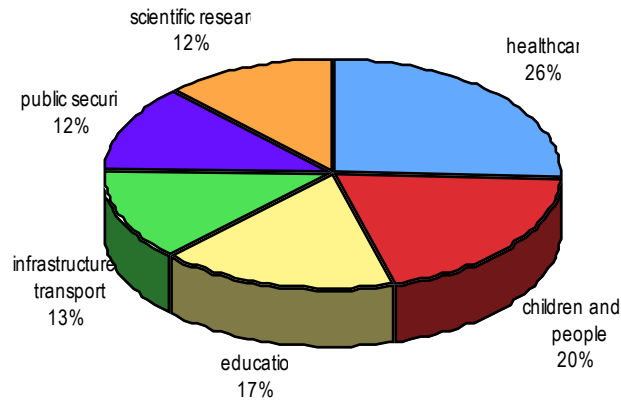
Levels of interest and information



Eurobarometer 2002 - HunSCAN 2004

Attitudes to science in Hungary were also approached from a more material viewpoint. When people were asked to distribute 100 units among six important fields of society, science scored the same as security or the development of the infrastructure.

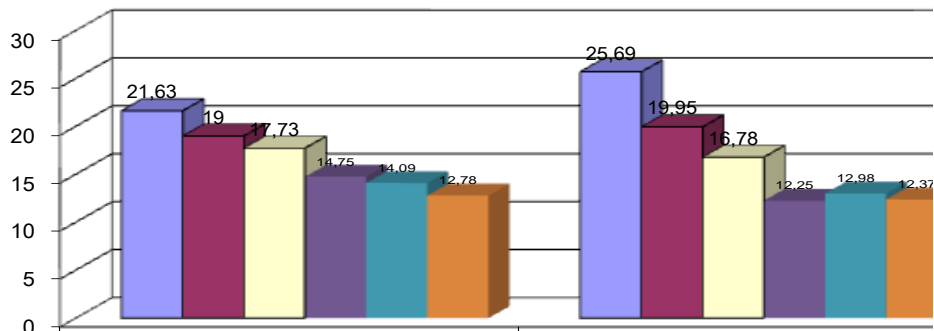
Spending of Money
How would you distribute 100 units?



HUnSCAN 2006

Deeper analysis showed that social status and access to cultural products account for significant differences. College educated people are prepared to spend more money on science than the average sample.

How would you distribute 100 units?
by level of education

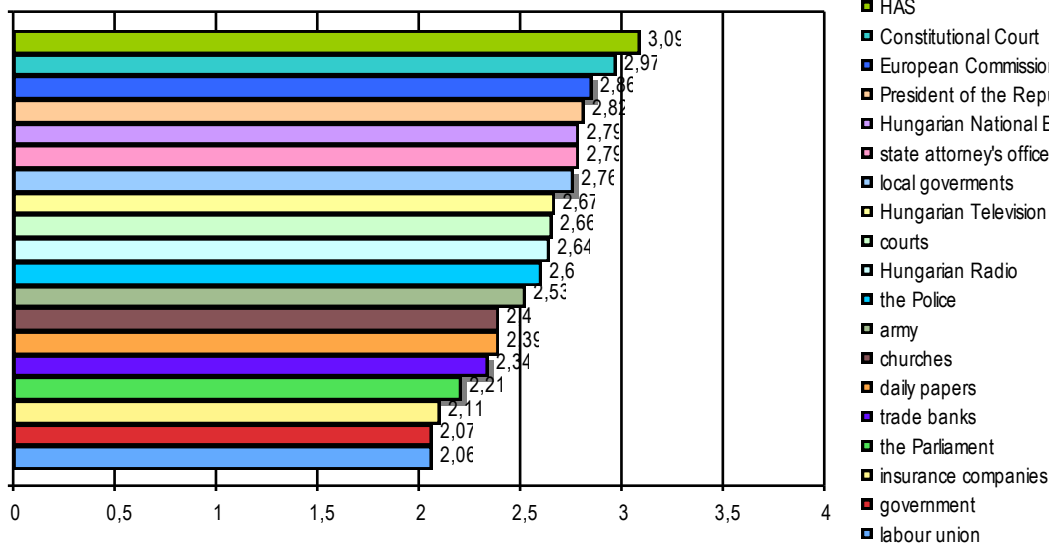


HunSCAN 2006

So, science could expect a lot of money - but who decides about this support? The social position of science is defined by data that show: people trust scientific institutes and scientists much more than, for example, the government (very surprising information in Hungary today...). Only less than 30 percent of the respondents say that competence of distribution should be given to out-of-science actors. Young people and college educated people would prefer scientific institutes, the Academy and the scientists to play this role.

Of course, in Hungary this result depends as much on politics as on the reputation of science... which is shown in the general confidence index.

Index of Social Confidence

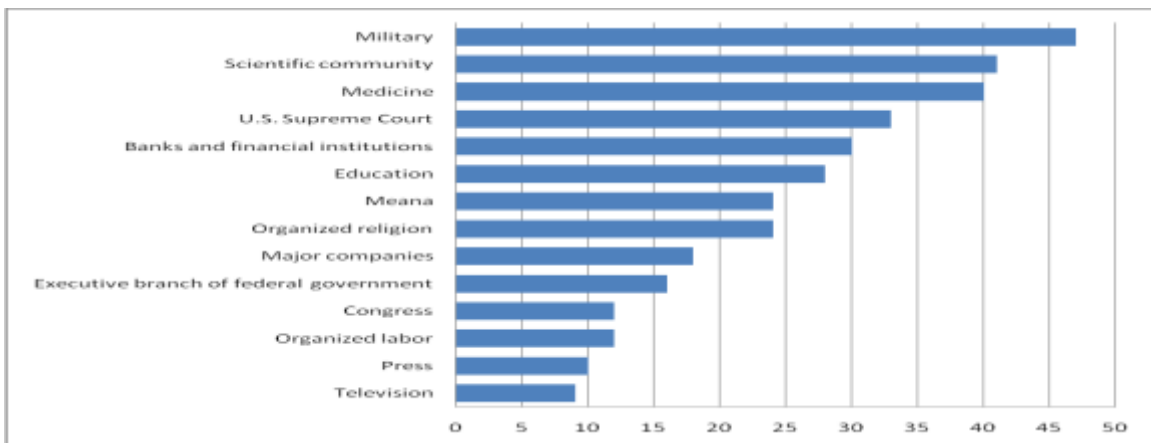


HunSCAN 2006

As you can see, the Academy was in the first range in 2004 and 2006. Naturally, in this question we find significant difference among the target groups, but the tendency is the same: science has the highest authority among people. However, I see a stronger approval of science by Hungarians. Scientific excellence is part of the Hungarian national identity. This means that people's perception can be deeply and generally stimulated by scientific topics and the issue of science.

Science has a similarly high prestige in the USA – but the first range is possessed by other organizations. Among a lot of historical and political causes, this high prestige of the military comes from the professional media activity of the Pentagon.

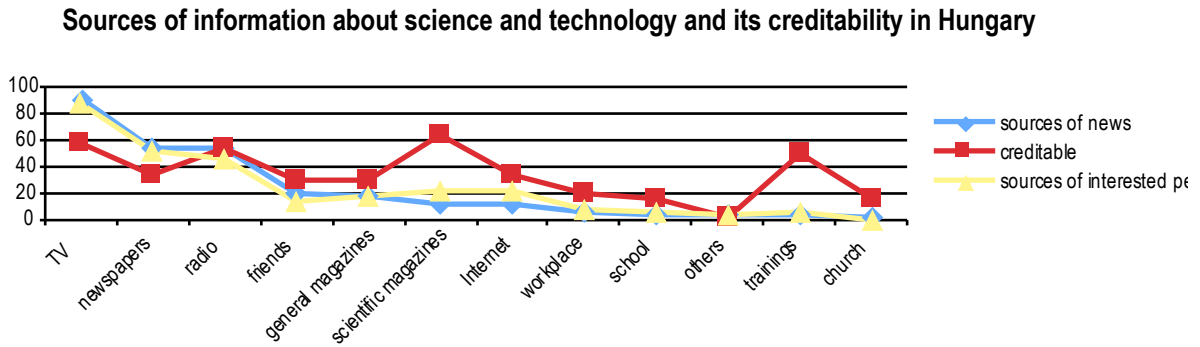
Index of Social Confidence - USA



NSF 2008

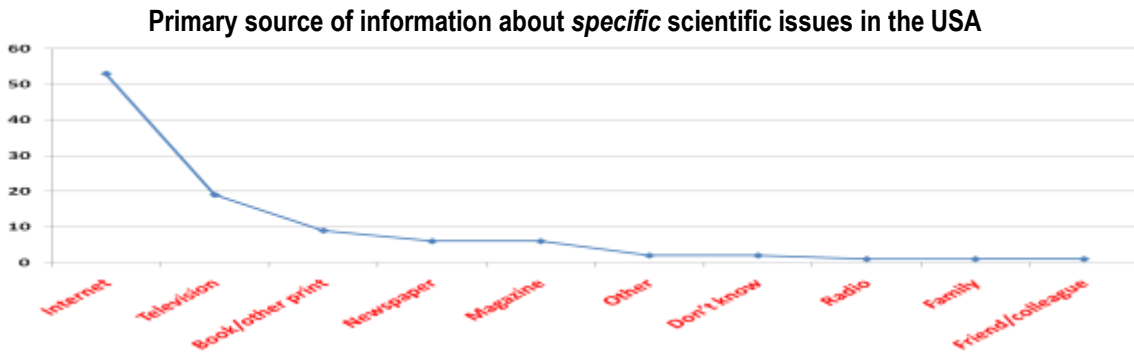
But what characterizes the media position of science?

I say “media”, but we must know that media means television above all. Data from the USA, the EU and Hungary show that the primary source of information about science and technology is television. These three lines in the graph show the outstanding role of television, and its dominance is the strongest in Hungary.



HunSCAN 2006

When people look for specific scientific content, the most important medium in the USA is already the Internet, rather than the TV – with more than half the population. Here the share of television has decreased to 19 percent!



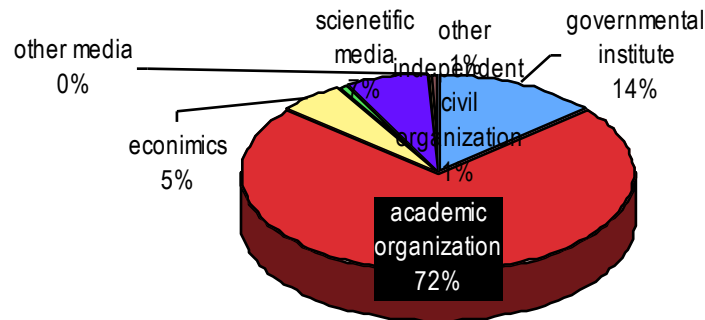
NSF 2008

Around a third of EU citizens (28%) look for information on scientific topics on the Internet regularly or occasionally. More than one in five respondents (22%) say they buy specialized press about scientific research regularly or occasionally. There is a high contrast between “old” and “new” member countries, but now for us it is more important that in Hungary the role of the Internet seems much smaller than in the USA and the EU.

And, finally, we have information from these surveys about the expectations of laypeople. Two quarters of the respondents find a dialogue between civilians and scientists important and they consider the academic

institutes the primary credible source. Contrary to the social constructivist opinion, people themselves do not think it would be right to give such decisions to NGOs. Caution about the risks of technological achievements is a responsibility to be assumed by scientific actors and thinkers of ethic.

Who's function is it to judge about the credibility of a scientific result?



HunSCAN 2006

In sum: Science is one of the most favored topics in society – but its audience is segmented by their intellectual and social backgrounds. This is a relevant issue for science-medialization, too, which is also dependent on the social background. Laypeople and scientists need to communicate with each other and both are discontent with the media presence of science. The most important medium is clearly television, but the use of the Internet is constantly increasing. The main factor in the perception of science seems to be authority.

II. Media and Science

Theoretical reflections on science have refined our perception of this situation. The recognition that public acquaintance with science is essential has become commonplace in recent years. So, considerable attention has been paid to the role of the media in the public communication of science.

The first book about the media coverage of science was published in 1967 by Hiller Kriehbaum. “Science and the Mass Media” argued issues that sound up to date: the media generally ignore science and/or look for sensations. Kriehbaum declared the requirements for the press: “it has to be diligent and responsible in its attentions to science, one that would apprise its readership of the latest in scientific findings, instill public confidence in the enterprise, and cultivate a popular excitement for the advances in knowledge it made possible.” (KRIEGHBAUM 1967. 27)

Since this book until the 80's such works reiterated the arguments of Krieghbaum. But after this period researchers have analyzed the relationship between science and the media more deeply. They have tried to overstep the mertonian image of science and they have redefined the actors and activities of science popularization. *Michel Cloitre* and *Terry Shinn* offered the viewpoint of "communication continuum". (CLOITRE-SHINN 1985) *Whitley* illustrated the route of scientific information, based on this theory. He identified four stages of scientific communication. (WHITLEY 1985. 13) Later, based on media surveys, *David Miller* drew up an other model to explore how the four key social groups: the social institutions, the press, the public and the decision makers, interact in producing science news. (MILLER 1999. 210)

Beyond risk communication, the basic book by *Jane Gregory* and *Steve Miller*, *Science in Public* (1998), points out that the media has special requirements against scientific popularization. Scientists feel that the importance of their credibility becomes devalued and they accuse the media of negligence. However, the need for the popularization of science is based on the process of scientific work. As *Shapin* wrote: "The differentiation and specialization of science meant that scientific knowledge no longer enjoyed a matter of course place in general culture. Yet, that same differentiation created an opportunity for the explicit 'popularization of science'". (SHAPIN 1990. 1001)

The interpretation of science-media issues gets a new dimension when they become part of a new popularization movement. The Public Understanding of Science (PUS) was launched by the Royal Society in the mid 80's and, as analyzed by *Mosoniné Fried Judit*, was the first to use the linear model of communication. Recent tendencies of this school, first of all Public Engagement of Science and Public Awareness, are enhancing the participation of lay people, which ambition requires new media tools too. (MOSONINÉ 2005)

At the same time, a parallel process ran, too: the medialisation of society. The road from "bürgerlichen Öffentlichkeit" to the age of mass media is described by *Peter Weingart* from the viewpoint of science as a radical change of science communication. The "gentlemen's talk" of academics turned into a paradoxical reception of science: "Kaum eine andere Institution erfreut sich eines so großen generellen Vertrauens und stößt doch gleichzeitig auf so viele Befürchtungen, wenn es um spezifische Entdeckungen und ihre praktische Umsetzung geht. Einstein und Frankenstein sind die Ikonen der Wissenschaft". (WEINGART 2005. 9) I think this comes on one hand from the interests of mass media that need sensations and, on the other hand from the intensive risk-communication of science.

Of course, not only the logic of science but the aspects of politics came up in the communication of science, too. After the Millennium a new school of science communication by *Matthew Nisbet* and *Chris Mooney* refreshed the science war, but not on the academic level of *Bruno Latour* or other academic left-wing

crusaders, but on the stage of everyday politics. Their theoretical approach is the reframing of science, inspired by Lakoff (2004). Nisbet wrote: “At a theoretical and descriptive level, research in the area of framing and media influence offers a rich explanation of how various actors in society define science-related issues in politically strategic ways, how journalists from various beats selectively cover these issues and how diverse audiences differentially perceive, understand and participate.” (NISBET 2009. 18)

So we see that the science-media relation has its own literature – but I think the quick change of media and deep questions of science itself both motivate the search for new practical and theoretical solutions. By presenting a case study I would like to show one such project.

III. ENCOMPASS

Theoretical approaches and experiences both were used when a new science popularization project was designed in 2002: scientists and experts of the Academy planned to improve media positions and refresh the perception of science with ENCOMPASS.

ENCOMPASS (**ENC**yclopedic **knO**wledge **M**ade a **P**opular **ASS**et, in Hungarian *Mindentudás Egyeteme*”, which means “university for all knowledge”) was created in a partnership between the academic supervision of the Hungarian Academy of Sciences and sponsorship from the corporate social responsibility programs of the telecommunications companies Magyar Telekom and T-Online. This cooperation of academic and corporate actors combined traditional values of science and modern project management. (FABRI 2006. 47-49)

What distinguished the program from other science popularization activities, for example the traditional Delta or the nation-wide organization for the public understanding of science, “TIT”? I am going to identify three factors:

First, Encompass offered not only a show or a series of shows, but an umbrella product with professional marketing! It had continuous and total media presence: regular weekly programs on three TV stations five times a week, radio broadcasting, national newspapers and regional papers, and the homepage of Encompass. This was made complete with particular actions like TV quizzes for students, books from lectures, conferences, expert panels about the relationship between science and society etc.

The second distinctive feature of an ENCOMPASS lecture was its complexity. These lectures as TV shows were much more than a “pure” talk. Around the central point of the show, which was a speech by a scientist,

were created cycles of features for media-ability: a video-portrait of the lecturer, short movies, interviews with students, colleagues, experts, business and social partners and laypeople, quizzes and other events.

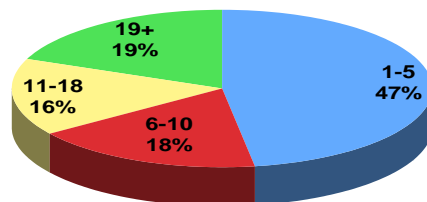
Structure of an ENCOMPASS TV Show



The third new development was the use of professional media tools. An Encompass lecture was handled as an entertaining TV product. Earlier the paradigm of scientific broadcasting (except for nature movies) was simple: you talk about science around a black table in black clothes in front of a black background or, alternatively, you must be a scientist from abroad, interviewed in your high tech lab or library. This solution was good for the scientist and the production staff, but bad (because unenjoyable) for viewers. Therefore, in producing Encompass, we spent a lot of money on filming equipment, animations and illustrations, in one word: on visualization.

The acknowledgement and popularity figures of ENCOMPASS show that this large investment was successful. 83 percent of the population saw at least one episode as of 2006, and more than 80 percent were satisfied.

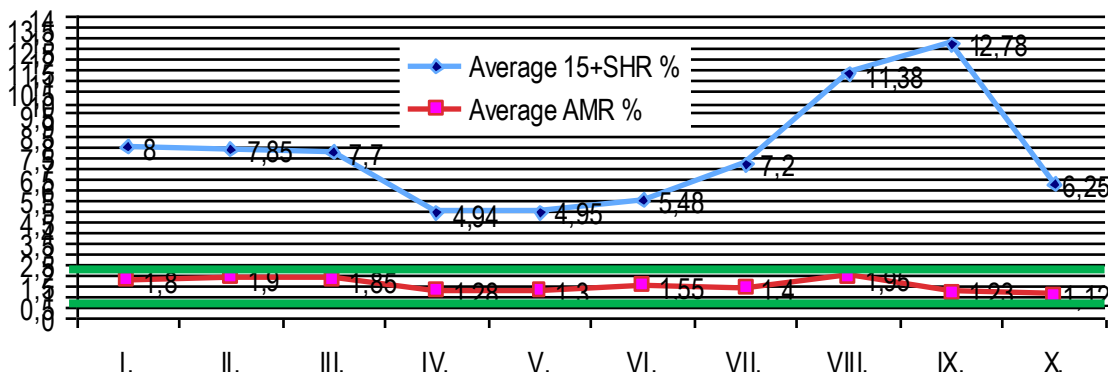
How many ENCOMPASS-lectures did people see?



Source: AGB 2006

But this graph can be read from two aspects. What is very good news is “from beneath”: Encompass could keep its audience but, as the top line shows, couldn’t enlarge it.

Viewership by semesters 2002-2007



The profile of this audience could be portrayed from viewership data. The typical ENCOMPASS viewer is highly educated and belongs to the highest income group. He or she has no or maximum one or two children. He or she is older than 50 and lives in Budapest. The inverse of this profile, the characteristics of non-viewers, shows that the project could not reach enough youths, village people and adults with secondary level education.

IV. What was the methodology and theoretical basis of the new media strategy behind ENCOMPASS?

First, the content was based on conservative, meritocratic principles: we offered products, answers and questions of science, not of other “new age” or “democratic” knowledge forms. Second, we required the use of competitive media technology and media tools without compromises (theoretically, of course, practice did require some compromises). Finally, the public understanding of science was realized as a marketing project: we didn’t wait for visitors to science but took science to the people, using the most effective media and PR channels.

How could this strategy work? The first factor of the effect was the personality of the main actor, the scientist. But this personality does not only consist of charisma and media skills: more important were his or her credibility and authority, which in science come from scientific work, scientific results and institutionalized acknowledgment, which are signified to the lay audience by age, position and titles.

The second factor was the topic of the content and of the lectures. Viewers are interested in concrete problems of science and they have favorite fields. How the media and people’s interests affect each other

would be an interesting question to discuss, but the hot topics for Hungarians were clearly medicine, pharmacology, molecular biology, astronomy, nanotechnology, engineering, the environment – and, possibly, psychology and history.

The third factor is programming, that is, the time the shows are broadcasted. This greatly determined the increase and decrease in viewership. Going on to the final part of my lecture, I am going to extend my point on programming from a specific TV solution to a more general concept of programming, stating that the scientific content needs to be present in the most convenient, most handy channels of media use.

V. Using the New Media for the communication of science

The current radical changes of media use are characterized by a number of technical facts: the increasing speed of data transfer, the flaring of mobility, increasing visualization capacity and rising levels of penetration. We also see the convergence of info communication tools: netbooks and smartphones represent the two directions of this, offering new solutions for science communication. Scientists operate virtual research networks and workshops, write science blogs and construct a virtual encyclopedia; scientific content can be watched on video sharing sites (like you tube etc.); so-called *Web 2.0* knowledge bases are being built (e.g. Wikipedia). Increasingly advanced visualizations are used within and without scientific forums, including those about research and science policy. We see the rise of *sciencetainment*, a new type of infotainment. Visual and digital effects are used in education with digital blackboards. (FABRI 2008. 244)

I think what these developments offer for science communication is a direct channel (first of all to youth), looping the conventional media structure. This is the new “programming” for science and a fortunate meeting of two processes. Scientific content is given less and less time and space in the conventional media, so it needs to look for other ways. Youth and intellectuals are increasingly leaving the broadcast media and the printed press and shift to mobile and networked media. This creates an opportunity for science communication to build a meeting place with credible and high quality content and user-friendly solutions for science and these media-dissidents.

But the euphoria of the new media doesn't solve the basic questions of the medialization of science. First, the challenge of professional communication for scientists remains – in fact, it is getting more and more difficult. There is a conflict between traditional scientific communication on one hand, and the requirements of micro-content and higher standards of production expertise necessary in the new media on the other hand. We have to produce short (really short, 3-to-5-minute!) well-edited, impressively visualized movies, speedily responding blogs and we have to upload them fast enough. This is a challenge not only for

scientists but for editors and managers too. Decreasing prices of digital media is only an illusion: the balance between popularity and professional standards still costs a lot of money. The question of roles also arises here: who should communicate science? Science journalists or the scientists themselves – or let the dilettantes do it?

Second, authority remains the requirement of science communication. According to the concept of testimony in science, *Gabor Pallo* writes: “mobile phones have become contributors to scientific research, rather than just instruments transmitting knowledge that originates in other sources. Through their connection with the new system of the digital world, they help to evaluate the content of scientific statements. Mobile devices, by their testimonial significance, can add new dimensions both to the content and to the credibility of scientific research.” (PALLO 2007) Although I am skeptical about this role of mobile phones, I agree that the networking of science, increased via mobile communication, can strengthen the authority of scientific information.

And, in closing my lecture, I would like to reinforce my thesis: without professional guidelines, the non-structured and non-institutionalized communication practice of the new media is an inadequate space for scientific content. This thesis calls attention to the limitations of *Web 2.0* and the new media from this viewpoint and leads to a basic approach of the relationship between science and the media.

As you could see earlier, authority has a central role in the reception of scientific media products and, more generally, in the position of science in society. In the world of the new media, this role is even more underlined, because content is built by the community, by the users. Here the credibility of science can be defended not by rules or power, but in two other ways.

On one hand, science has to take pride in its tradition and ambition to pursue truth. I know this runs against the postmodern, relativist and social constructivist mainstream of humanities and politics, but it characterizes the real working of science. Of course, the power of the media and politics (like it happened in the era of Nazism or Maoism) can force science to surrender the classic Humboldt–Vannevar Bush model of the autonomy of science. I am sure that science has theoretical and practical arguments to use in this fight.

On the other hand, the prestigious science and scientists have to become competitive in the new media. That means they have to communicate with laypeople and give answers to their reasonable questions, and have to be open for this discourse. In short, ***we need media-able science, not medialized science.***

Thank you for your attention!

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