

**Parallel Session 19: Scientists and science institutions as PCST agents:  
Experiences**

**OPENING THE BLACK BOX: A CROSS-NATIONAL SURVEY OF  
VISITORS AT EUROPEAN RESEARCH CENTRES**

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**Abstract**

In a comparative study of the visitor programmes at European research centres for physics in Germany, Greece, France/Switzerland and Italy, the contents and effects of this communication activity between the centres as producers of scientific knowledge and the public were analysed. A combination of qualitative and quantitative methods was used and more than 3 600 visitors were surveyed several times. The results promote the understanding of this traditional kind of PCST activity in various respects (e.g. visit effects) and make suggestions for improving communication with the public through visitor programmes. The research was funded by the European Union.

**Key words:** public communication, visitor programmes, research centres

**Text**

**Introduction**

Many European research centres offer regular visitor programmes and Open Days for the general public as part of their public relations work, and each year thousands of visitors, e.g. school classes, students, and groups of lay persons, take the opportunity of looking behind the scenes at these institutions for the production of scientific knowledge. But what exactly happens during these visits and whether visitors and centres benefit from them still resembles a “black box”.

In order to study these visits and their effects on the visitors we conducted a cross-cultural survey of visitors at four major European research centres: CERN (Switzerland/France), Demokritos (Greece), DESY (Germany) and LNGS (Italy).<sup>1</sup> The research design of this EU-funded project “Inside the Big Black Box – Analysing visits to physics laboratories” (IN3B) included in-depth interviews, ethnographic observations, and a survey. A total of 3 600

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visitors were interviewed before and immediately after the visit; a sub-sample was re-interviewed by telephone several months later along with a matching sample of non-visitors.

#### The visitors and their expectations

School classes and groups of pupils aged 15 to 19 were the predominant visitor type at all research centres, representing between 52% and 92% of the samples. The other visitors were university students, professionally interested and non-expert visitor groups.

Most visitors regarded their knowledge about the research centre as low before the visit, but their interest in scientific research as rather high (58% to 81% indicated a rather strong or very strong interest). Between 30% and 55% of the visiting pupils were interested in a science career. The visitors' initial image of the research centre and the research done there was rather positive. Prior to the visit, approx. 60% preferred public funding of research with practical benefits to basic research with no practical implications.

The visitors' main motive for the visit was a general interest in scientific research, and they primarily expected to see what kind of research was done at the centre.

#### The visitors' level of satisfaction

The results from the quantitative analysis revealed that the overall satisfaction was high in the four research centres. In particular visitors appreciated the possibility to ask questions to the guides and the quality of the guides' answers. Sometimes, visitors had encountered acoustical problems during the visit.

Almost all visitors (95% - 98%,) confirmed that they had seen what kind of research was done, and 86% - 93% had received an overview of the centre.

From the sample of visitors who had volunteered to be re-interviewed by phone several months later, most confirmed that they were satisfied with the visit. However, these re-interviewed visitors already had been more satisfied than others when interviewed directly after the visit.

In contrast to the quantitative analysis, the in-depth interviews revealed other remarks: for example, difficulties in understanding the guides' explanations and a lack of involvement.

The most liked items of the visit were indeed the experimental sites, because of their large size and contact with real science.

#### Effects of the visit

The visitor programmes of the research centres studied share several aims: to inform visitors of ongoing research activities, stimulate interest and curiosity toward science, channel scientific contents, encourage a positive attitude to research.

Based on the comparison of answers given before and after the visit we could assess the main effects of the visit concerning these aims. The visit appeared quite effective in the short run and less so in the medium term; a kind of "snowball effect" was observed, as the large majority of visitors talked with

others about the visit afterwards; the visit had quite a positive effect of increasing the visitors' knowledge about the research centre and the research activity done; after the visit, the number of pupils who wanted to become a scientist increased, even if this positive effect was lower in the case of physics; visitors' knowledge of some fundamentals of physics increased, although to an extent which varied from case to case and was not always so evident.

Surprisingly, despite a high level of satisfaction, the visitors' image of the research centre and its research was hardly changed by the visit.

#### Conclusion

With respect to the general goal of improving communication between science and society, the research centres play a strategic role based on their distinctiveness as institutions for scientific knowledge production and dissemination.

In this regard, visits to these authentic places for the production of science can be an invaluable experience for visitors, as confirmed by their high level of satisfaction.

Therefore the possibility of this encounter with research in progress and the occasion to have a look behind the scenes should not only be maintained, but also further used. Our research project has also provided a lot of insights for improving the visits and for reflecting on their relevance as PCST tools.

