

## **Museums and museums: the picture of scientific museums**

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### **Introduction**

In the field of scientific communication in Europe, science centres have gained increasing importance over the last ten years. Italy, beyond the City of Science in Naples, is also planning the set up of more science centres throughout the country. Their hands-on style makes them something between a museum and a fun fair and, beyond the issue of merit, no doubt the success of many science centres also depends on the fun offered. It is important then to be able to assess to what extent people can actually make use of the proposed themes.

This report tries to point out the dialogue opportunities between science museums and people<sup>1</sup>. A questionnaire has been submitted to two scientific secondary schools in Trent and Busto Arsizio (Varese) as a pilot study in this research.

A research of this kind should not limit itself to museums, because public opinion on scientific subjects is also influenced by more popular and widespread media such as newspapers and television. Together with people, museums should therefore also be able to make good use of these media and offer opportunities for investigating

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<sup>1</sup> Merzagora, Matteo, *La Città della Scienza di Napoli*, Jekyll.comm, Nr. 3, Sept. 2002

and going into detail about given topics that the other media deal with without leaving enough time for thinking them over.

### **Ideas on the museum function**

Since their establishment, museums have always had two main functions: preserving works of art and showing them to the public. This has contributed to a process of democratisation of cultural enjoyment. Ivan Karp<sup>2</sup> underlines the social importance of museums:

As significant civic elements, museums organise social ideas and, like it or not, determine the relationship with communities. The processes by which institutions like museums build sense and negotiate or discuss identities are the unwritten and ever-moving constitution of civil society, whose ideas are built and lived through in a continuous fight for success, against the imposition of an identity.

On the one hand, we have an explicit social function, but on the other, as Raimondo Strassoldo points out,<sup>3</sup> some negative elements emerge. The greatest problem is isolation from context, or eradication: a work of art or any other object in a museum is isolated from its original surrounding and, in this way, its social and cultural function disappears, leaving its place to pure aesthetical enjoyment. Moreover, the strict classification of works in a museum has created a particular reading of works of art.

Cameron Duncan's ideas<sup>4</sup> give a clear picture of the functions of museums. In his work of 1972 he identified two possible kinds of museum: the temple and the forum.

- The *temple* has a universal and supratemporal function that is related to using a well-structured sample of reality not as a referent but as an objective way of comparing individual perceptions.
- The *forum*, on the contrary, is a place for experimentation, confrontation and debate.

### **Science museums**

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<sup>2</sup> Karp, Ivan, *Musei e comunità: la politica dell'intervento culturale pubblico*, in "Musei e comunità", ed. Karp, I., Kreamer M., Lavine S. D., Smithsonian Institution Press, 1992

<sup>3</sup> Strassoldo, Raimondo, *Forma e funzione. Introduzione alla sociologia dell'arte*, Forum, Udine, 1998

<sup>4</sup> Duncan, Cameron, *The museum: a temple or the forum*, Journal of World History, 14, 1, 1972

One of the topics of greatest discussion in science centres is the realisation of this new model of museum, the forum. The idea, the dream, or the utopia is that of building places with a real unwritten (scientific) constitution that people can refer to. This kind of constitution should not come from an élite, nor from expert people, but should be the result of a discussion of the entire community. This kind of agora, piazza or, even better, city of science should be a place where all the inhabitants of a real city (ordinary citizens, scientists, people in the productive and political field) get together.<sup>5</sup> Making a list of all the efforts in this direction is not easy and would require a thoroughgoing analysis. “Instant exhibitions” with debates and forums where people can actively build material to deepen their knowledge of the most recent topics are spreading in Europe. Quite often (for example in Naples) museums are being created as job-incubators, where the exposed technologies and the internal scientific abilities create new professional opportunities. At a closer look, however, we can see a common mistake in all the hypotheses of changing the communicative approach of museums. They always risk being imposed by someone and often do not represent the real needs of those who want to gain the identity of scientific citizen. If becoming a forum, a piazza, an agora, is a real need and not just an intention, proposals should come from people themselves through new instruments that allow for a constant dialogue.

### **Visitor studies**

With these premises, if and when museums offer more than just a visit, research on who the museum-goers are/on museum-visiting play a very important role.

The importance of this research, boasting a history of almost a hundred-years, is now clear, whether we talk of art museums, art galleries, science museums or science centres. Science has evolved in the second half of the last century and today it is no longer possible to disregard those who enjoy it and society in general.

The main points of this kind of research are dealt with in one of the first systematic works on social research on museum-visitors.<sup>6</sup> As the editors themselves

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<sup>5</sup> Wagensberg Jorge, *Principios fundamentales de la museología científica moderna*, in “Publicació de l’Associació Catalana de Comunicació Científica” N. 21, 2000

<sup>6</sup> Binell, S., Farmelo, G., *Museum visitor studies in the 90s*, Science Museum, 1993

underline, the very place where the meeting was held has a special significance: the London Science Museum has been considering visitor studies a key field since 1990.

Research techniques are very diversified and each of them involves a particular approach and, not the least, a particular bias. Every sociological analysis has a specific starting point: the idea of a researcher, that can often be quite obscure; the difficulty of analysis is also increased by the mixture of cultural, cognitive and marketing investigation.

An even greater problem, above all in Italy, is that professional figures like researchers are not being considered in permanent institutions like museums. This leads to two considerations:

- Firstly, these different do-it-yourself methods make it impossible for reports to be compared. Indeed, most reports do not even get published, as they remain internal information.
- Secondly, this kind of random research does not help shorten the distance between museums and the public or cancel the impression of imposition by someone else. A visitor-friendly museum that asks for its visitors' opinion, not just through questionnaires alone, would be the first step towards a forum.

## **The research**

Starting from these considerations, we have decided to ask people about their museums- and scientific museum-going in particular. We also wished to inquire about their opinion on the possibility of a constant dialogue in museums. Thus, they were submitted a questionnaire to assess their cultural abilities, their relationship with scientific information and their relationship with general and scientific museums, the latter being of major importance for our research. The questionnaire has turned out to be a scarcely effective method for gathering ideas on dialogue opportunities, but conversely, has been successful in offering greater knowledge as to the habits and attitudes of people towards museums. This report shows the information gathered for this part of the research.

The questionnaire was submitted to 360 students of a Scientific Secondary School in Busto Arsizio and to 233 of a Scientific Secondary School in Trent. The two towns are quite similar in size (around 100,000 inhabitants in Trent and around 75,000

in Busto Arsizio) but do have some important differences. Firstly, Trent is a chief town in an autonomous province and, consequently, its public management is different from that of a provincial town such as Busto Arsizio. Secondly, Busto Arsizio is part of the greater area of Milan and its cultural activities are mainly based on those of the city, with desultory school or family visits to the Science and Technique Museum or to the Museum of Natural Sciences of Milan. Trent, on the contrary, has its own museum in the town centre (Tridentine Museum of Natural Sciences) that is almost regularly visited thanks to the variety of its temporary exhibitions, educational workshops, and meetings and to its convenient position. In addition to this, round-table conferences/panels and public debates organised in Trent over the past two years have been informing people of a new Science Centre. This, of course, entails a greatly different background.

Questions 3, 4 and 5 of the questionnaire were respectively about going to the cinema/theatre, reading books and visiting museums/exhibitions. The answers were “once”, “2-5 times”, “5-10 times” and “more than 10 times”. To better highlight the significant results of these questions, we have grouped the answers in two classes: class A refers to answers “once” and “2-5 times”, class B to answers “5 –10” and “more than 10 times”.

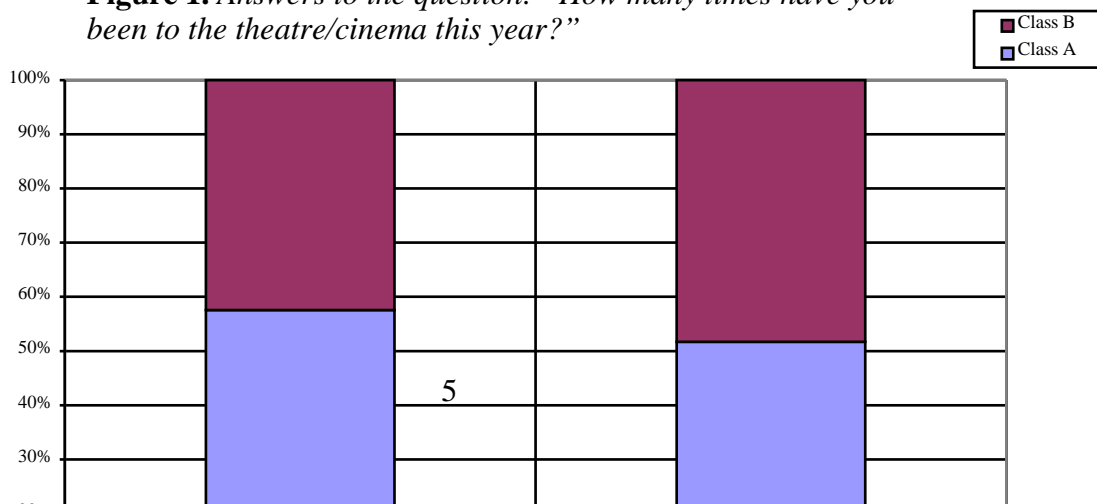
Question: “How many times have you been to the cinema/theatre this year?” (see **figure 1**) the answers were as follows:

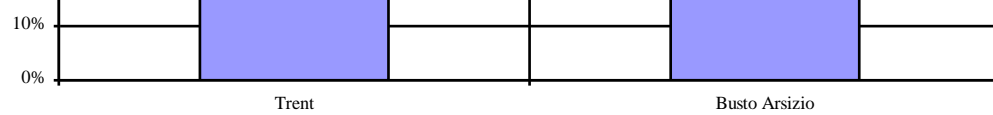
<i>Busto Arsizio:</i>	51% A	49% B
<i>Trent:</i>	58% A	42% B

Question: “How many books have you read this year?” (see **figure 2**) the answers were:

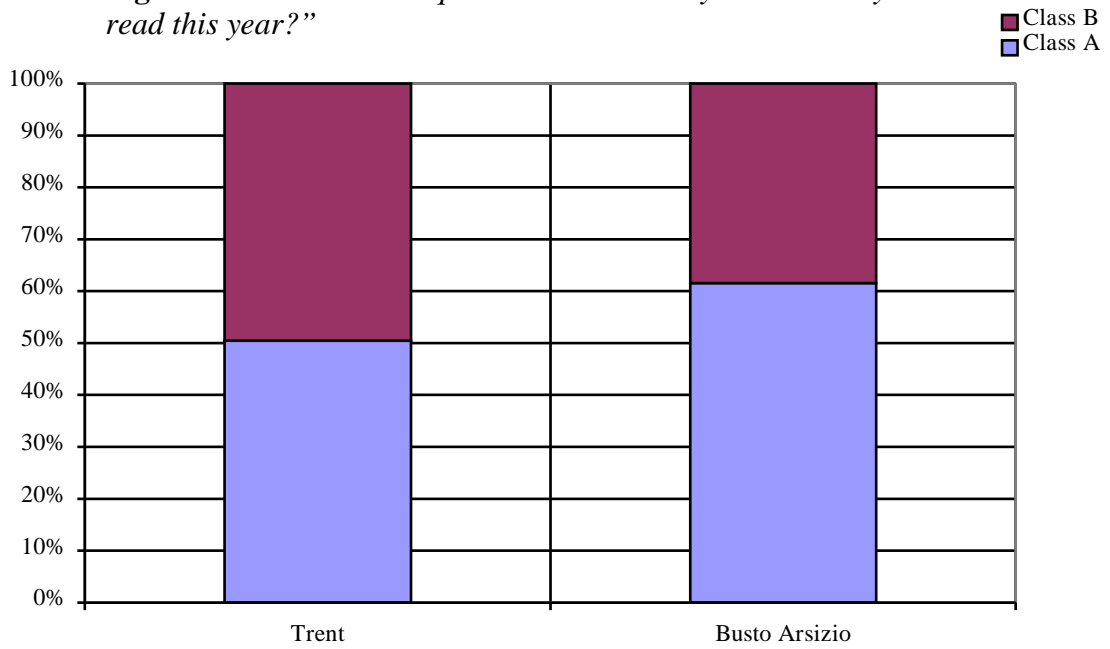
<i>Busto Arsizio:</i>	62% A	38% B
<i>Trent:</i>	50% A	50% B

**Figure 1.** Answers to the question: “How many times have you been to the theatre/cinema this year?”





**Figure 2.** Answers to the question: “How many books have you read this year?”

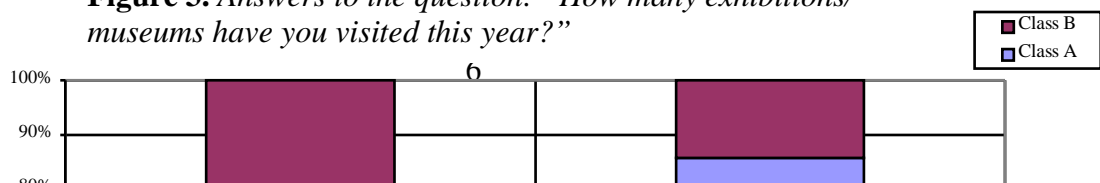


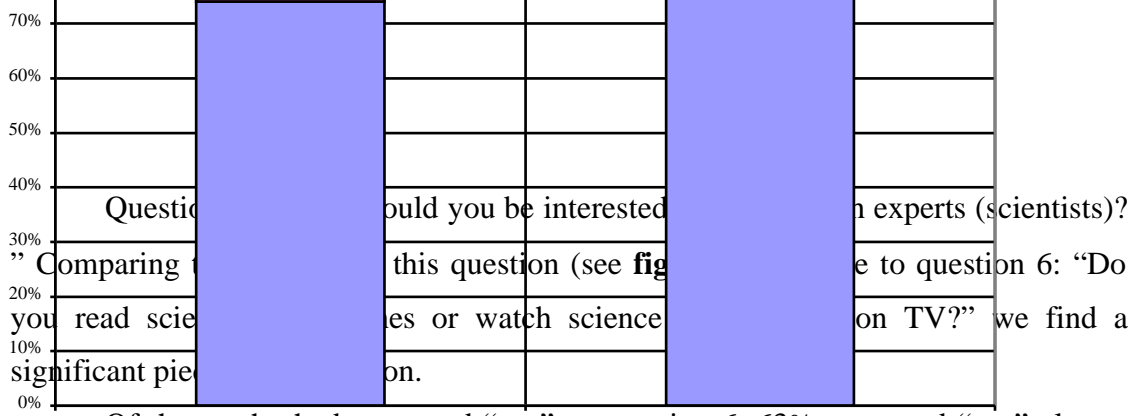
Lastly, the question of greater relevance to our research: “How many times have you visited museums/exhibitions this year?” (see **figure 3**) The answers were:

<i>Busto Arsizio:</i>	85% A	15% B
<i>Trent:</i>	74% A	26% B

The significant difference in this last question is that the percentage of students who answered “once” in Busto Arsizio was 37%, while in Trent it was 15%. In both towns the percentage of students who answered “5-10 times” and “more than 10 times” is lower than in the other questions. In Busto Arsizio the percentage of “once” sees a significant increase against other questions, while it remains stable in Trent, where it is class “2-5 times” that shows a meaningful increase (for details on question 5 see **figure 4**). As we already noted at the beginning of this section, the presence of a permanent museum in Trent has meant an increased number of visits.

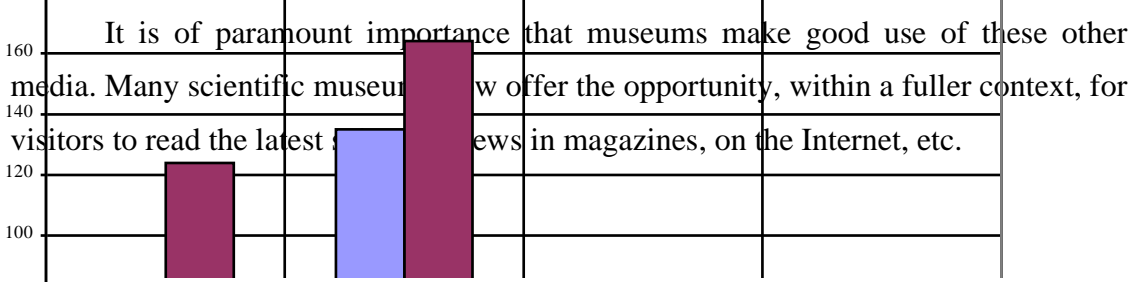
**Figure 3.** Answers to the question: “How many exhibitions/museums have you visited this year?”



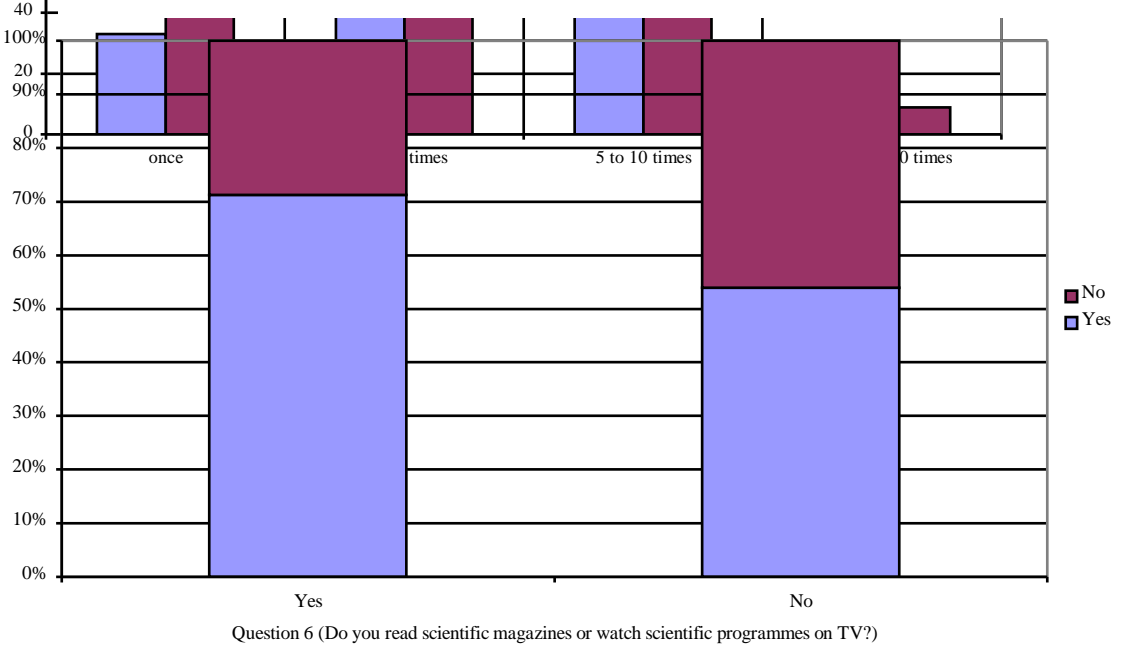


Of those who had answered “yes” to question 6, 63% answered “yes” also to question 10, while among those who had answered “no” to question 6 the percentage of “yes” to question 10 was 51%. It is important to keep this result into consideration:

**Figure 4.** Details of answers to the question: “How many exhibitions/museums have you visited this year?”



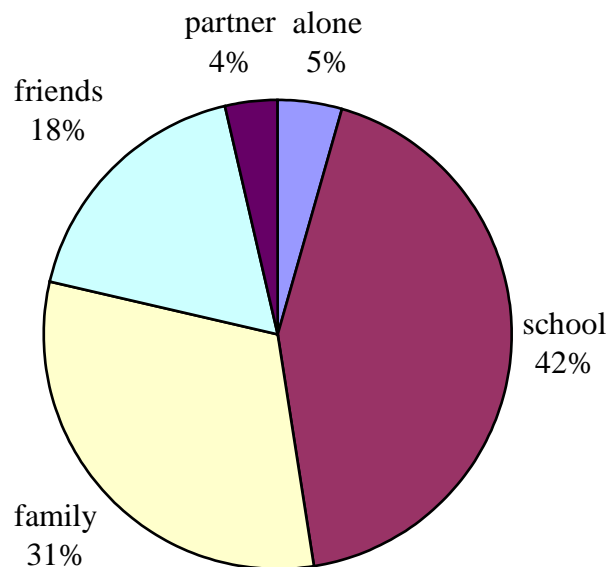
**Figure 5.** Answers to the question: “Would you be interested in talking with experts (scientists)?” based on the answers to the question: “Do you read scientific magazines or watch scientific programmes on TV?”



Another interesting comparison is that between question 13 (“With whom do you usually visit/would you like to visit exhibitions?”) and question 19 (“With whom do you usually visit/would you like to visit scientific museums?”). The possible answers were: “school”, “family”, “partner”, “alone”. The results show that museum-going mainly depends on school and family (see **figures 6** and **7**). These two sectors alone account for 74% of the answers to question 13, though dropping to 51% in question 19. In this question, other answers gain ground: “friends” rises from 18% to 27%, “partner” from 3,5% to 11%, “alone” from 4% to 11%. “School” again scores the highest result, as is obvious for this age bracket, but slides from 43% to 35%, while “family” drops from 31% to 16%.

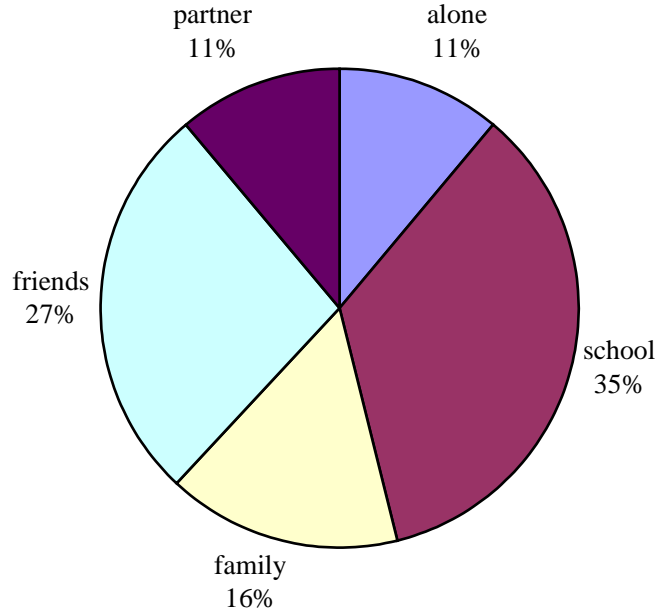
This trend shows that something is changing in visiting scientific museums. Exhibitions still mean art or history to be visited as a guided educational event, while scientific museums are turning out to be places where to go alone or with friends, without parents or teachers. Places where one can understand, ask and express his/her opinion.

**Figure 6.** *Answers to the question: “With whom do you usually visit exhibitions?”*

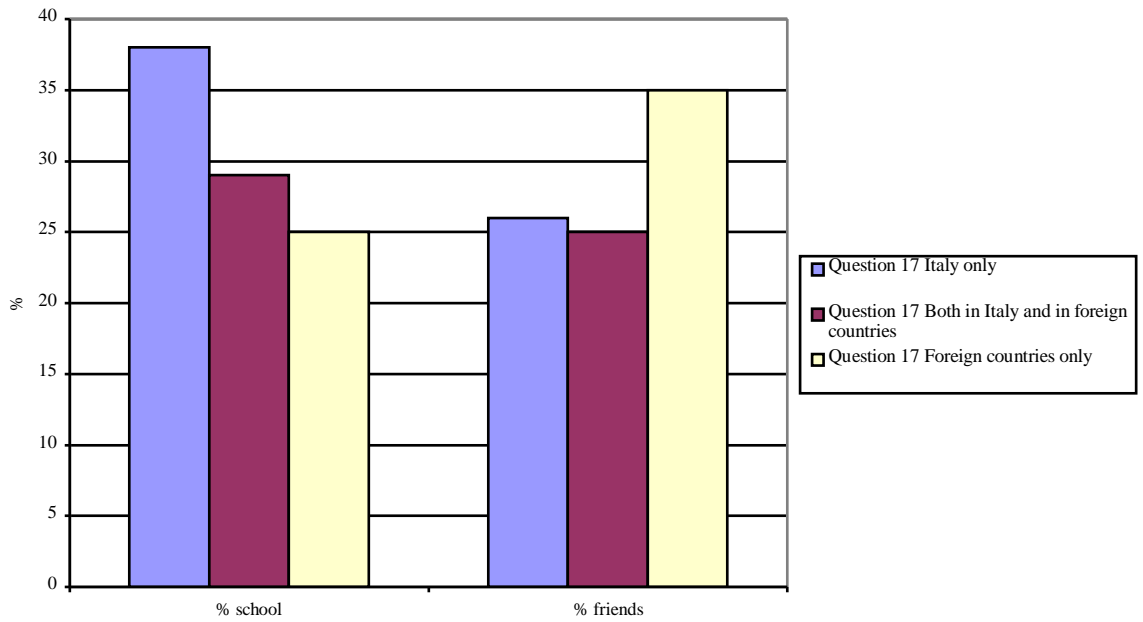




**Figure 7.** Answers to the question:  
 “With whom would you like to visit a scientific museum?”



**Figure 8.** Details on “school” and “friends” in the answers to the question:  
 “With whom would you like to visit a scientific museum?” based on the  
 answers to the question: “Have you visited a scientific museum? Where?”



In this sense, it is possible to compare the answers to questions 17 and 19: “Have you visited scientific museums? If so, where? (Italy, foreign country, both)”. The details (see **figure 8**) show that the percentage of “school” drops from 38% for those who visited only Italian scientific museums to 29% for those who visited both Italian and foreign scientific museums, to 25% for those who visited only foreign scientific museums. On the other hand, the percentage of “friends” increases from 26% (Italian museums only) to 35% (foreign museums only).

Another question that shows the difference between Italian and foreign museums is question 18: “What do you think is the main function of museums? (learning, getting information, having fun, spending time)”. As was to be expected, the percentage of “learning” and “getting information” in the students’ answers is very high. It is to be noted, however, that the percentage of “having fun” doubles while also that of “spending time” increases, when speaking of foreign museums.

The exact meaning of “learning” and “getting information”, however, is still to be defined. The percentage of “learning” is slightly lower for students who visited foreign scientific museums than for students who only visited Italian scientific museums, while that of “getting information” shows a greater drop (45% to 26% in Trent).

A questionnaire has proved to be scarcely effective in carrying out this kind of analysis. Research on the cognitive importance of museums would require more thoroughgoing interviews<sup>7</sup> as well as a qualitative analysis.

## Conclusions

This research shows that, as far as secondary school students are concerned, the relationship between scientific museums and their public is evolving. Science is today so present in our knowledge and background that it can be experienced in a more direct way, with less need for guides.

On the other hand, there are still some difficulties in direct relationships with the authors of scientific knowledge, and this is precisely what needs to be more thoroughly studied. A museum that is no longer a temple offering knowledge from high above should be able to bring people closer to science and its knowledge-producing system.

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<sup>7</sup> Bucchi, M., Nerisini, F., *L'impatto cognitivo della visita museale*, in “Andare al museo”, ed. Mazzolini R. G., Giunta della Provincia Autonoma di Trento, 2002

The starting point from which to reach this goal is the will of museum-goers to get to know the problems and to find room for debate in a less academic context. If museums turn into places where we can get in contact with friends as well as with men of science, and do not remain obligatory destinations chosen by the family or school, then they can perhaps really play a dialogical role.

The new relationship, especially in an experimental phase, should be the exact opposite of the present top-down model. People should be involved from the start in order to understand how to best find times and places to meet.

As already noted above, this research also identifies another role the museum can play. People often find it difficult to understand the waves of news that the Internet, newspapers and television submerge them with, because of their huge quantity and of the chaos of the whole system. A scientific museum could be the best subject to bring light, order and background information to all the scientific news other media inundate us with. Giving the scientific museum the role of critic does not mean considering it superior to other media. Museums too have to build a better critical framework and direct approach to communication with people. What is meant is that museums can be the most suitable medium to understand doubts and problems that cannot be solved on a one-to-one basis with other media. Moreover, time in museums is different from that of a newspaper reading, and a longer time gives us more room for relationships, analysis and debate.

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