PLACES

Platform of Local Authorities and Communicators Engaged in Science

**Modules used: A1, C1**

**Science Event**

**2012**

This is a standardized version of the original case analysis number 2. Specific names and locations have been substituted from the original document number 2 with generic references in order to preserve the anonymity of each participant.

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## Abstract

With the aim of facilitating the conversation between science, policy-makers and society on a European level, the European project PLACES (Platform of Local Authorities and Communicators Engaged in Science) has developed a toolkit aimed at measuring the impact of initiatives and policies within the area of science communication and scientific culture. In this report from this city, we undertake an impact assessment study based on the toolkit of a science event, which was a free one-day event organised by a science centre, in cooperation with the city on Sunday April 1st 2012, on the theme of sustainable mobility. Using semi-structured interviews, this report focuses on the impact of this science event both on individual citizens and on five of the participating actors.

The main finding is that, although this science event was generally recognised by both visitors and actors as a potentially unique opportunity for public communication about science and technology, it primarily served other goals. We conclude by calling for a rethinking of science events and by making some recommendations about future science communication activities, policies and impact assessments.

## Introduction

In today's western high-tech societies, science and technology are generally put forward as cornerstones of prosperity, discursively linking economic growth, political stability, social well-being and progress to the extent to which societies rely on science and technology. However, science and technology have not only pervaded our daily lives through the many technological products and services whose comfort we enjoy, but they have also taken centre-stage in many of today's social and political debates: rapid advances in science and technology present us with tremendous democratic challenges, since these not only offer many potential benefits to health, quality of life, and economic development, but simultaneously introduce known and unknown risks to health, the environment, and social justice. In response to public dissent regarding new technologies, policy-makers, scientific institutes and advocacy organisations regularly identify a crisis in public trust with regards to science and technology, which subsequently leads to new science communication initiatives (such as science museums, festivals, centres, etc.), with the aim of increasing public appreciation through the promotion of science and technology. The European project PLACES (Platform of Local Authorities and Communicators Engaged in Science) is not only a perfect example of this, but aims to go a step further, in putting forward its mission as being the facilitator of the conversation between science, policy-makers and society on a European level. To offer a wide and diverse community of actors a common platform to structure their science communication activities at a city/regional level, a toolkit has been developed aimed at measuring the impact of initiatives and policies within the area of science communication and scientific culture in general (i.e. SCIP: Science Communication Initiatives and Policies). The (Places Impact Assessment) toolkit takes an operational look at the impact of SCIPs across three dimensions: impact on the public (citizens), impact on the political sphere (the local and regional dimension), and impact on the actors involved in the SCIPs themselves. Each of these three dimensions is divided into three levels based on the agent that is responsible for the SCIP: the level of museums and science centres, the level of science events, and the level of cities of scientific culture (or science cities).

In this national report, we undertake an impact assessment study of a science event (level), focusing on the impact on individual citizens and the actors involved (dimensions). According to the European science events association's (EUSEA) White Book "Science Communication Events in Europe", the common goals and objectives of 'science events' are: the objective of raising public awareness of science, the promotion of a dialogue between science and society, encouraging young people into science, the favourable marketing of science, and the promotion of not only the results of scientific work

but also the scientific process. We will focus on the impact of this science event both on individual citizens and on the actors involved in the SCIP (dimensions). In the latter case, representatives from an innovation platform, two research institutions, a car-sharing organisation and a non-profit organisation were interviewed (in addition to the organiser of the science event). The effects we will explore in the case of individual citizens are those relating to immediate impact, such as the learning of key concepts and the understanding of key principles; attitudes towards science and technology in general and towards the science centre or science event in particular; motivation, inspiration, interest in following science and technology news, events or innovations; and beliefs about controversial issues. The effects explored in the case of the actors are: advocacy (in terms of public acceptance, prestige and visibility), feedback about public and professional responses to research (or potential new research topics and questions), acquiring communication skills, networking between actors in different categories, competitiveness (economic benefits including marketing/sales), and involvement/commitment for public science communication.

The science event selected as our case study was a free one-day event which took place on Sunday April 1st 2012, organised by a science centre in cooperation with the city. The event took place simultaneously at two locations: from 9:30 to 17:00 at one and also from 13:00 to 16:00 in the city market square. The theme was sustainable mobility. Over the course of the day, visitors were able to learn about a diverse range of sustainable transport. Following the general philosophy of the science centre, which characterises itself as an experimental 'do-centre' aiming at popularising scientific and technological developments for young and old in an interactive way, test rides were available with electric and hybrid cars, bikes, scooters and quads. Other high-tech cars, powered by either solar or wind energy were made available. Children in particular were given the chance to ride mini-quads or actively join specific workshops. Many of the exhibitors were the manufacturers of these new vehicles, bicycles, and scooters, while car sharing organisations, research institutions and universities were there to inform visitors about various aspects of sustainable mobility. There was also a parade through the city following the STOP-principle (Walking, Cycling, Public transport, Private cars).

According to the organisers, cooperation between the science centre and the city helped in promoting the event, resulting in a good deal of publicity being created by the city along with regional media coverage (television and newspapers), even though the use of advertising in not an option for the science centre in general (see Annex 1 for an overview of press coverage of this science event). Furthermore, the regional Minister of Innovation was present at the press conference to promote the event.

This science event was chosen to set up a partnership within the PLACES-framework on the theme of ‘sustainable mobility’. The organisation of this event was a direct product of this partnership. The event was also used as an opportunity to question the inhabitants of the city and visitors to the science centre on their attitudes towards sustainable mobility. Given the way this science event was organised, it was also easily accessible by regular visitors to the science centre or by people who were interested in technology, green mobility or cars in general. This allowed for a varied audience resulting in 814 visitors, according to the organisation. The subsequent science event held in 2013 will be organised based on the experiences of this first event, and will also include cooperation from local colleges with regard to the Master’s Programme on sustainable mobility, as well as a debate.

## Methods

For assessing the impact on individual citizens as well as the participating actors, face-to-face, semi-structured interviews were decided on in each case (except for one interview by email), implying respectively that modules A1 and C1 of the toolkit were used (the translations of the modules into the national language can be found in Annex 2). These interviews were conducted by two researchers from the department of communication studies of a university.

Semi-structured interviews with visitors were favoured over a standardised survey for two practical reasons: not only was this science event a small-scale one day event (implying a short time span and a potentially small sample), but the organisation itself was also carrying out surveys that same day. These interviews were all digitally recorded. Semi-structured interviews with the actors involved were favoured over focus groups for similar practical reasons, since the actors involved were present during the day, it was more efficient to conduct individual semi-structured interviews with each of them on site instead of soliciting potential participants for a focus group to be conducted at another time at another location for two consecutive hours.

The interviews with the visitors were conducted during the morning. The organisation requested beforehand that these should take no longer than 20 to 30 minutes each. Eventually, five interviews were conducted, but with nine respondents. There were two important reasons for this: one, since mainly families and friends visited the science event, it was impossible to ask people to leave their party, and two, attendance was quite low, which led us to opt for interviewing those people who were willing without putting additional demands on them. Eventually, by allowing interviewees to respond to each other, this way of working appeared to have the effect of eliciting more information than probably would have been collected from individual respondents. Both researchers walked around near the exit of the exhibition and asked people whether they were willing to be interviewed. Thanks to the science centre, the interviewers could reward interviewees with a small booklet containing Do-It-Yourself scientific experiments from the science centre. In the end, one family of three, two couples, two friends, and one individual visitor were interviewed. Our sample was quite diverse, ranging from technology-savvy environmentally-conscious individuals, to a community worker, to students who had come for a school assignment, and included older as well as younger people, with either a higher or lower educational background.

The sample of participating actors on site was the result of contacts made by the science communication manager of the science centre with various actors in the field of green mobility, from car companies, to car-sharing programmes, to cycling organisations. Some actors had an exhibition stand with

some basic information from their organisation, others offered the opportunity to test-drive several electric vehicles or try out a green driving simulator. The selection of the participating actors was done in conjunction with the organisation, which not only compiled a list of potential interviewees, but also informed them of our presence. In the end, six interviews were conducted. Four interviews happened on site, on the afternoon of the event. The interview with the organisation took place at the science centre on May 23rd and a last interview was conducted by email since the interviewee was required to check his questions and answers with his employer. All interviews were digitally recorded except this last one. A diverse sample of actors was interviewed: a representative from the platform of living lab electric vehicles innovation, two research institutions, a car-sharing organisation, a non-profit organisation promoting driving using pure plant oil, and the science centre event organiser. All the actors in our sample had a stand at the exhibition, except, of course, for the organiser.

## Results

### Module A1: Impact on the public

Despite promotion by the city and regional media coverage, only one of the interviewees pointed to visiting this science event as a result of these messages, in this case an item broadcast by the regional television channel. The others were either specifically looking for an event to visit on that specific day or theme or arrived by accident.

*I think it should be better advertised. I just came here by accident to this event. I didn't intend to come here.*

*It happens to be that I'm participating in a project for school about that subject, about green driving. My husband found this event, we decided to come.*

*I have to write an assignment about a professional exhibition for a trade magazine. I saw an online announcement, Googled it and found it. While I live in the city, I knew nothing about it. The promotion could have been a lot better if they wanted to reach more people.*

It is remarkable that this last city resident—the only one in our sample—had not heard or seen any promotion by the city or regional media. Therefore, it is not surprising that none of the interviewees even knew about the city being a science city. Nonetheless, the interviewees agreed that it was an excellent idea to organise such an event, because most people are unaware of recent technological developments in the area of green mobility.

*It would be good for my city to organise something like this too, because I think at the moment most people are completely unaware of this science event or the development of green mobility.*

The question of why people chose to visit this science event received diverse answers:

*Ummm. New technologies, that's something we are very interested in. And also for some entertainment.*

*I was really looking for gas-related applications, instead of electrical ones… But in general, I am interested in technology.*

*Our youngest is interested in cars and I am mainly interested in the ecological aspect.*

Furthermore, all interviewees also agreed on the extent to which their knowledge had increased on sustainable mobility by visiting the science event. Although the interviewees were quite diverse in terms of their prior knowledge of sustainable transport (from basic to quite extensive), we observed a great

deal of surprise about the advanced development of green cars, or as one visitor put it:

*What I would like to take home with me is that there are already quite a lot of electric cars. I wasn't aware that quite a few brands not only make electric cars but also have them on the market.*

*It was useful, yes. I take home with me that each brand has its own electric car.*

Their common motivation was clearly to bring themselves up-to-date with the latest developments in this area. The most attractive—and liked—element of the event was its interactive nature. Interviewees really enjoyed the opportunity to drive electric cars or to talk to a diverse range of actors in the field. Several actually tried a vehicle and were quite enthusiastic about this. These visitors put it this way:

*It has been very interesting so far. We drove a wind-powered car. That was fun.*

*What I found especially interesting was pressing rapeseed. I also received a good explanation.*

*Everything is very attractively portrayed. What was very interesting for me personally was to talk in-depth to the developer of a wind car about how it was developed, and the concepts behind it.*

*I like the fact that you are able to try things out. This is also true of the day in general, as there are not many people present, you can try out a lot of things.*

The event was also put forward as a necessary complement to media coverage, which was seen as deficient in communicating about sustainable mobility by one interviewee. Nonetheless, there was also quite a lot of criticism: a general lack of depth was observed (especially by those interviewees who had visited other science centres or events before), which was attributed to the commercial nature of many exhibition stands:

*[The explanation on ecological transport] was very limited. It should have been more in-depth. Many brands are represented here which are rather commercial… it's going a bit far to call it [a publicity stunt], but publicity certainly plays a role. Apparently, all brands have an electric car nowadays.*

*Now I know that when Toyota says hybrid this and hybrid that in commercials, that it is not completely ecological. While they act as if it is. These car manufacturers are also here to sell cars. They know they have to evolve by making ecological cars with less greenhouse gas emissions and they have to make sure they keep their customers*

Comparing this science event to other science events or centres visited, one of the interviewees criticised the failure to cater for small children.

*At children's university there are more possibilities. It's for all ages. More experiments… here it's more commercial. I think it's aimed at an adult audience…or at least older children.*

Another interviewee compared the event to a trip to the planetarium, and concluded that this science event lacked any general introduction and the availability of guides. Moreover, since the event was not well attended, many exhibition stands were unmanned with nobody available to answer questions, so you had to go and find the people yourselves. Lastly, the most technology-savvy visitor attributed the lack of depth to the focus on usage instead of the technology behind it.

In general, the interviewees had difficulty with the questions about the significance of this science event compared to other cultural or scientific activities or for the city or region. Either a quite vague answer was given or the question was interpreted as referring to personal relevance. When the issue of personal relevance was discussed, it was remarkable that most visitors focused on technological innovations for cars, like electric cars or green driving to reduce emissions in their interpretation of green mobility. Only one interviewee also mentioned other aspects such as the public transport system and indicated that there was a lack of information on solutions that go beyond the individual ownership of vehicles.

*I believe in alternative mobility which is more about using than about actually possessing cars.*

On the other hand, the interest of this visitor was clearly driven by strong ecological values, while the other interviewees were mainly interested in the technological aspects of green mobility, although the prospect of greener cars was welcomed for environmental reasons. Green mobility was interpreted as something for the future rather than a current development:

*I don't know what's better gas or electricity, the future will tell. Things still have to be improved. Even the developers do not know what the right technology will be.*

This might explain why none of the interviewed visitors intend to really change their behaviour or do anything with the things they learned. They did not see how they could apply this to their life, for a variety of reasons: they were already using the car as little as possible, or had a company car or could not afford a more sustainable car. One visitor felt there was a lack of information about the more practical implications for an individual with an electric car.

*What could it mean for me?*

Correspondingly, the interviews highlighted the fact that pre-existing attitudes had led these people to visit the science event and, in most cases, these were only reinforced:

*We have to take care of our natural resources. This event helps to inspire… shows what is around… and ultimately: it's important. For everyone. Especially for younger generations.*

*For my project, I had already found out some things beforehand about green driving. It was not really an eye-opener for me.*

Mixed responses were given on the issue of whether the information obtained would make the interviewees more confident in discussing the science of sustainable transport, because of the lack of depth which was often identified and the observation that many questions were left unanswered by the event:

*This kind of information is not given: What happens if I buy an electric car? Does it really save me money? Or does it just save the environment? Or both? It's not clear whether you have to recharge your car every evening. It's like they've put a too positive spin on the information. But maybe it's just presented in the wrong way.*

Nonetheless, one interviewee said the opposite.

*I think so [I feel I am better informed and able to discuss green mobility]. I think so. Because you pick up new things and you can ask people questions. It helps to better evaluate the options.*

On the other hand, several interviewees questioned the 'greenness' of so-called green technologies, referring to the issue of 'greenwashing' by industry. Their visit to the event was clearly of help in seeing through this marketing. One visitor answered that this enabled her to distinguish 'real' green cars from greenwashing.

*Yes some companies advertise themselves as green companies, while actually changing nothing.*

Unsurprisingly for science event visitors, the interviewees agreed on the benefits of science and technology.

*It's the key to the future. Science and education.*

*I think science has always played a key role. Everything is science, everything we come into contact with. An event such as today's is only possible thanks to science.*

*I also believe in science; that it has a positive effect, but of course you can always use it in a bad and a good way, but I do believe that the positive effects certainly outweigh the potential negative effects. So yes, the general answer would be yes.*

Others emphasised how important science and technology were in all areas, from ecology, to health, to development and progress in general. The students interviewed emphasised how internet applications have improved their quality of life. On the other hand, when asked about problems related to scientific and technological developments, the respondents were all in agreement, referring to genetic modification, electromagnetic radiation and nuclear power as issues where they believe there is significant scientific uncertainty:

*There are developments which are problematic. Think about nuclear energy. We think we have that under control, but that's also what they thought in Japan. Something can of course always go wrong. The same for genetic manipulation.*

*At some points, I think yes, some elements of science, like for instance: genetic modification. Specifically Monsanto, Cargill… We have been using cotton for such a long time, what gives them the right to make everybody dependent on them. It cannot co-exist with other forms of agriculture. With the resources we have there is no need, the only thing they are doing is increasing their profit margin.*

**Module C1: Impact on the actors**

In this section, the results of the interviews with the actors are presented, focusing on the impact that participating in the event has had on the actor itself. Firstly, we will present the nature and motivation for involvement, as well as the possible impacts of involvement for each actor respectively, before summarising the main findings in general.

This research consortium, public and private institutions were all asked by the science centre to participate in the science event, as the institution is responsible for testing electric vehicles and their real life charging infrastructure in the region (with the help of volunteers). The goal of this innovation platform, supported by the government, is not only to test electric mobility, but also to introduce it into the streetscape. This latter objective motivated the institutions to take part in this science event. The resources invested were limited to manpower, in addition to a small exhibition stand routinely used for industry or professional exhibitions. This science event was their first exhibition aimed at individual citizens. A key objective was to demonstrate that electric mobility goes beyond electric vehicles and also includes many ICT-applications, such as charging and payment infrastructure. Little impact was noted for this actor, as the actor itself repeatedly emphasised that, as a government-funded, non-profit institution, the organisation had not set any specific objectives—although taking part in this science event was identified as part of a larger government strategy to build a strong international image in terms of promoting electric mobility, which they believe will further benefit from increasing public awareness. Furthermore, by surveying the visitors of the exhibition, and through the questions posed by other participating actors with a stand at the event, the

institution received feedback about public and professional responses to electric mobility issues, which potentially will lead to new research topics. However, since this event was the first aimed at individual citizens, new communication skills were also thought to have been acquired through the information it provided regarding the organisation and electric mobility to families with children.

Group T, which is an engineering college affiliated with a university, was invited by the science centre to participate as a constructor of solar cars (and as the solar team participant). They accepted the invitation because this type of visibility helps to create support for their solar car projects, not only in general, but also specifically towards their sponsors. In addition to inspiring youth for science and technology as an important general mission, Group T has an important economic motivation to participate: being totally dependent on sponsorship, events such as this play an important part in terms of competitiveness and networking. In the case of Group T, this refers to the other professional participants in this science event (not to the visitors) and is put forward as the common motivation for participating in similar events. The representative from Group T further states quite clearly that there were no relevant questions asked nor information provided by the visitors that day.

A government-financed organisation which organises car sharing in the region (in close cooperation with public transportation services) was invited by the science centre and decided that it was important to be present as a counterbalance to the many car manufacturers. The interviewee did not believe this science event had an impact on the image of his/her organisation and pointed out that nobody has ever signed a car-sharing contract before at these kinds of events. Although public feedback is generally appreciated, the low turnout prevented this from happening during this science event. The assumption is, however, that people who might be interested in buying an electric car may postpone their purchase after learning that this organisation also offers electric cars. Professional networking with the other exhibitors was greatly valued and these contacts are expected to lead to future cooperation, so were rated as important.

Another non-profit organisation promoting driving on pure plant oil was contacted by the science centre based on its earlier participation in an event on alternative sustainable mobility organised by an environmental mobility federation. Its main reason for participating in this science event was to advocate the existence of pure (rapeseed) plant oil as an environmentally-friendly and sustainable form of fuel, which is different to biodiesel. The main impact of their presence was seen in terms of contributing to a broader perspective within the organisation on the matter of sustainable mobility, driven by feedback from public and professional responses to pure plant oil. Despite the low attendance, this representative would participate again should this event

be organised for a second time. In terms of public science communication, this science event on several levels resembled a motor show more than a science event, according to this representative, with an emphasis on promotion and sale instead of information.

A research institution for (sustainable) development and innovation within the automotive industry, which is co-financed by the government and private sector, was invited by the city with the aim of explaining its activities to a larger audience and its exhibition stand was staffed by two of its engineers. Although this was approached as an opportunity to enhance its public image through visibility at this science event, the attendance was deemed too low to have succeeded on this front, according to the representative. On competitiveness in general and the recruitment of researchers in particular, this event was also not thought to have had any impact due to low attendance. No more than ten people visited the stand during the day, although these visits were rated as very successful due to the enthusiasm of the visitors. The primary impact was seen in terms of learning from the other participants' stands on the one hand, and in terms of networking with the event organisers, which will be important for participation in future activities aimed at a general audience. In the end, this science event was seen as being important for the visibility of electric mobility, but more extensive and better promotion will be required to ensure its future success.

Disappointment regarding the number of visitors was communicated in each of the interviews, which explains why any potential impact related to the public at large had little chance of success. The event organisers stressed that a lot of energy had been devoted to promoting this science event, which was seen as having been reasonably successful, not least because of the cooperation from the city, which provided free promotion, thereby compensating for the fact that media advertising is not an option for the science centre. Nonetheless, the low attendance was attributed to two factors: a dependency on the weather for a successful turnout at these kinds of events (and the weather was very nice that day) and the simultaneous organisation of the most popular cycling event in the region on the same day. The organisation nonetheless recorded 814 visitors.

Furthermore, the substantive quality of the event was generally supported by all the actors. Each of them felt it was a unique opportunity to inform the public about their work. The only similar event in this area is an annual science week, which provides an annual review of future-oriented technologies in the fields of mobility and environment, with an appealing blend of sporty, educational, technological and recreational elements.

This implies, on the one hand, that advocacy in terms of increasing public visibility and awareness of electric and sustainable mobility emerged as an

overall goal for participating in the event, while, on the other hand, the low turnout mainly resulted in feedback being about professional responses to their research or activities or, put differently, networking between the diverse professional participants of the event being the most reported impact in these interviews. In other words, there was little impact recorded related to the public at large, while the impact related to the making of professional contacts, either with other exhibitors or the organiser itself, was clearly valued, often as motivation for potential future participation in similar events. Regarding the former, we not only found that no really relevant public responses were recorded, but we also discovered some scepticism about this expectation in general: since visitors to these events are generally already quite engaged, only proper teacher training and good science classes at school will be able to encourage scientific culture.

On the other hand, it was also interesting that some actors either compared this science event to a motor show, rather than to a science event, or explicitly indicated that their presence was important as a counterbalance to the many car manufacturers. While none of the interviewees stated economic interests as a reason for participation or said they were expecting a direct impact on their competitiveness or sales—although one did explicitly state that this event was primarily important to attract potential new sponsors or to provide some publicity for the existing sponsors—this is likely explained by the fact that no representatives were interviewed from organisations with a direct profit motive. The organisation argued that a diverse range of actors participated with diverse motivations: while research institutions mainly aim to increase public awareness regarding the diversity of electric vehicles, car manufacturers mainly aim to boost economic benefits in terms of sales to compensate for their investment in participating in the event. All participants had been asked, nonetheless, to avoid mounting a purely commercial exhibition stand and to include information relevant to sustainable mobility when promoting specific cars.

## Conclusions

In the introduction, the common goals and objectives of science events were summarised as raising public awareness of science, promoting a dialogue between science and society, encouraging young people into science, with the combined aim of creating a popular brand for ‘science’. For several reasons, it is fair to say that this event’s record in this respect was quite poor. Not only did we find that the most common impact on the participating actors was limited to professional feedback and networking, the interviews with both visitors and actors also highlighted the fact that this science event succeeded primarily in attracting already engaged visitors whose pre-existing attitudes were subsequently reinforced.

Although this event was generally recognised by both visitors and actors as a unique opportunity for public communication about science and technology, several factors contributed to the conclusion being drawn that it did not deliver on this front. In addition to a low turnout, the science event itself was generally perceived as having quite a commercial emphasis, at times resembling a motor show: the most commonly mentioned new piece of information the visitors would take away was that most car brands market sustainable cars nowadays. Consequently, the general criticism of the event by visitors focused on the lack of depth regarding the relevant techno-scientific aspects of sustainable mobility and the emphasis on usage rather than technology.

Nonetheless, it is exactly this latter aspect which aroused most enthusiasm from the visitors: those exhibitions with an interactive component were the most popular. The actors interviewed did not believe this science event had any real social impact, and, in their individual cases, their presence was interpreted more as a routine activity, with no significant changes to their respective organisation or its communication expected to result from participating in the event. At the same time, this event could clearly be called a success since all interviews with both visitors and actors resulted in enthusiastic participants which confirmed their future participation should a subsequent similar event take place.

This leads us to the conclusion that there is a problem with the conceptualisation of a science event in general and the goals and objectives established in particular. Science events do not take place in a vacuum, but in a specific socio-political and socio-economic context, which enable, as well as constrain, the actions of individuals and organisations. With regard to the general public, this not only explains why these events mostly attract people who are already engaged with the respective themes, but also why these people respond quite enthusiastically when asked about the significance of ‘science and technology’ in general, while being in agreement with regard to

problematic issues such as genetic modification, electromagnetic radiation and nuclear power on being asked about potential problems related to science and technology. This confirms earlier studies which have argued that general attitudes to science are poor predictors of public attitudes to specific scientific issues, since those people who are more scientifically literate are often more opposed to morally contentious areas of research than people who are less informed. When scientific research cannot rely on a perception of impartiality and disinterestedness, and citizens demand more public involvement and participation in the case of problematic—mostly highly commercialized—developments (Reference 1) the role of science events needs to be reconsidered. With regard to the participating actors, this also explains in several ways why their participation in this science event was perceived as a success, while none of the goals and objectives established in the definition of a science event were met.

On the other hand, for the participating actors, the more important goals of professional networking and market visibility were met. Furthermore, the commercial emphasis and the role of car manufacturers point to, respectively, the commercialization of science (further eroding science's claim to impartiality and disinterestedness) and the centrality of a specific mode of mobility in society: individual car ownership (with its many social consequences in terms of its structural entrenchment on the one hand, and the marginalization of possible alternatives on the other).

## Recommendations

These findings nonetheless allow us to make some recommendations about future science communication activities and policies (the first two recommendations), and impact assessments (recommendation three and four). These recommendations are not specific policy or research proposals, rather broad remarks, derived from the conclusions:

### Be clear about your objectives

It is not made clear anywhere what it is that the city and the science centre want to achieve with green mobility as a general subject. Is the objective to promote the city as a city of ''scientific culture'' by increasing awareness and appreciation of particular techno-scientific advances? Or is the objective to make people switch to alternative mobility behaviours? While exhibition stand A could present truly innovative technology, exhibit stand B could just as well be a stand by a cyclists union defending the rights of cyclists.

Making people aware of techno-scientific advances or changing their behaviour are quite different objectives and therefore require different policies. Appreciation and knowledge of electric cars will not automatically lead to more users of these cars, without clearly available charging stations or fiscal incentives. Behavioural change is only possible when people see its potential. It would have been interesting to see how the exhibited technology and alternatives could be applied within the specific context of the city, with concrete examples.

### Science events need to be able to grow

Many actors complained about the lack of visitors and visitors said they had not heard much about this science event. On the other hand, most channels of communication had been addressed. Since one-off events are particularly dependent on the date and weather conditions, a longer, more permanent exhibition could exceed these limitations.

### The distinctions between actors have become blurred

The actors in module C1 were separated into categories, such as ‘scientist’, ‘companies & industry’, ’third sector’ or ‘science institution’. At this science event, many car manufacturers were represented by engineers, as was the case with science institutions. The only university actor interviewed was demonstrating a solar car mainly funded by private investors and was from a research institution co-financed through government and private funding. All these examples demonstrate the extent of the commercialisation of science and how increasingly difficult it has become to approach science, government and

industry as separate entities, certainly with regard to the development of new technologies.

**Evaluation questions should be less direct**

Questions such as ‘In your opinion, how important is science for the development of contemporary society?’ are difficult to answer for most people. It would have been more interesting if the questions or topic list allowed visitors to talk about science in an experiential way, rather than asking them very directly about the importance of science, because this not only leads to superficial answers, but also reproduces a (homogeneous, impartial and disinterested) view of science which is no longer valid. Why not ask people about their perceptions of trust or the commercial motives underlying many applications?

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