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MSc Science Communication

Looking for a Dialogue:  
A Science Communication Event Analysis  
*Assignment 2 in Science and its social contexts*

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Since we were given this assignment, I have attended four public engagement events, in four different science institutions. It was not my intention to go on a material-gathering spree, for they were in my calendar anyway, but this neatly allows me to draw parallels, make generalizations, analyze differences and look for patterns.

I will build my argument concentrating on one of these, a Nature Live event in Natural History Museum on 27 November. Titled «99% Ape: How Evolution Adds Up», Professor Jonathan Silvertown from Open University discussed, well, evolution. The other events were Dana Centre's Dinner@Dana on 19 November, where Natural History Museum palaeontologist Louise Humphrey gave an overview on her latest work on prehistoric humans in North Africa; the 4 December lecture by Polly Winsor from University of Toronto in Linnean Society, titled «Darwin and Huxley's Disagreement over Taxonomy's Connection to Evolution»; and Royal Society's event on 5 December titled «Water: the Long Road from Aristotelian Element to H<sub>2</sub>O», given by UCL Professor Hasok Chang, a science historian and philosopher.

The possibility to attend a number of different science outreach events within a few weeks is by itself evidence of the active work done by many institutions to increase public engagement in science. Fostered by the 2000 House of Lords report Science and Society, the emphasis on dialogue and public engagement (also known as PEST) has become a central topic in discussing the relationship between science and society.

The attempt to engage public was at various degrees evident in all events I attended. The least effort for engagement was probably made by Linnean Society whose event was just a regular meeting of the society, but made open to the public. I doubt that the event would have been any different would it not have been public. All other events were specifically designed for public outreach, aiming to communicate a particular aspect of science to lay audience.

Before starting to analyze the efficiency of these science communication events, it is appropriate to attempt to clarify the limitations and possibilities that derive from the nature and structure of the events. In other words: Can we talk about dialogue?

Following the typology of public engagement mechanisms developed by Rowe and Frewer (2005), these events can be classified as *public events with Q&A*. Based on the flow of

information between participants and organizers (whom they call 'sponsors') they propose three categories of public participation: public communication, public consultation, and public participation (which collectively can be called public engagement).

Public events belong to the category of public communication, where information flow is one-way: there is no involvement of the public *per se* in the sense that public feedback is not required or specifically sought (Rowe&Frewer, 2005: 255). So we cannot talk about a dialogue. In public consultation, information is conveyed from members of the public to the sponsors of the initiative, following a process initiated by the sponsor; dialogue occurs in public participation, where information is exchanged between members of the public and the sponsors, serving to transform opinions in the members of both parties (*ibid.*).

Further, public events are characterized by relying to the public come to the information rather vice versa. As such, the involved public is largely self-selected and biased in terms of those most proactive and interested, Rowe and Frewer argue (*ibid.*, 278). This was certainly true for the attended events – there were no restrictions or pre-selection on audience, the events were free and only in two of them (Dana Centre and Royal Society) a pre-booking was required<sup>1</sup>. Of course, the Linnean Society event was most heavily biased regarding the audience, consisting predominantly of society's members.

But one must note that Rowe and Frewer's typology is based on the definition of public participation as the practice of involving members of the public in the agenda-setting, decision-making, and policy-forming activities of organizations/institutions responsible for policy development (*ibid.*, 253). The same idea of public engagement in policy-making is central to the House of Lords report (House of Lords Select Committee, 2000) which among the activities of engaging public does not discuss public events. This in turn reflects the position of critics of the 'deficit model', that the interest of the public cannot be presumed if they have no part in the decision making process (Turney, 2003).

Events with no connection to policy-making or not specifically discussing risk or uncertainty, have thus received less attention in discussion of public engagement tools, yet they are one of

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<sup>1</sup> Also the audience seemed biased towards older people. It is an interesting effect which is certainly worth further investigation: Do they just have more free time to attend those events? What are their goals in attending these events? How can they realize this engagement? Is this the population group we want to engage with science? Etc.

the most common forms of public engagement. Formats where public can listen to a talk and then participate in an open debate, like in the Café Scientifique, have in recent years become popular all over the world (Clery, 2003). This was also the structure of all four attended events – a talk of about 45 minutes to an hour, followed by a Q&A session of about 15 minutes. The events were also similar in other structural details – like the presence of the host who introduced the event and the speaker and later chaired the discussion.

The event in the Natural History Museum was for me a good example of a public engagement event, the most engaging one of the four attended, perhaps because I share some views that are dominant among scientist themselves of how science should be communicated. These views have been outlined by Sarah Davies (2008) and I will return to them during my analysis.

The opening remarks of the speaker, Professor Silvertown, made clear that they are aiming for an atmosphere of openness and dialogue: he instructed the audience to stop him any time when something is not clear or they have questions (no-one did). He was dressed casually, stood freely and moved around while talking which also contributed in creating a more intimate relationship to the audience. Yet some boundaries between him and the audience were drawn, first by the chair by presenting the speaker's scientific credentials (which is, of course, necessary to generate trust in the speaker), then by the speaker himself, in making some references to elite institutions (like the current issue of the journal *Nature*) or emphasizing that what he is presenting is only a gross simplification. But these were not dominant in the overall atmosphere.

Professor Silvertown started the presentation with the case of Bulgarian nurses in Libya, who were sentenced to death for allegedly spreading HIV in a children hospital where they worked. By explaining the mechanism of evolution (DNA copying errors) which helps us to recreate the 'family tree', he showed that the accusations were unfounded and scientific evidence led to the release of the nurses. Then he focussed on how evolution works, giving examples of pigeon and dog breeds and fossil evidence and ended the talk with referring to other practical implications of reconstructing the evolution of organisms like learning the genetic basis of diseases in humans.

You could tell that the talk was carefully prepared, with a general audience in mind. The slides in the presentation were visually attractive (sometimes cartoons) and easily comprehensible while presenting scientific information. In the talk he used numerous metaphors, examples and references to concepts from everyday life: in short, he tried hard to make the subject relevant to the audience and make the subject also emotionally engaging. It is evident that he had been thoroughly working on the material as he also recently published a book popularizing evolution.

The speaker skilfully used exactly those three concepts that Davies (2008) has shown scientists consider being the most effective kind of information transfer to public. They are: (1) Relevance: If you are not «glued into people's experiences on a personal level», you will lose your audience; (2) conveying 'big ideas' rather than the details of their science: They would rather that people understood the reasons for or reasoning behind the work that they were doing than the exact names of the enzymes they were studying; and (3) the ideal should be visual or interactive forms of communication: demonstrations, activities involving the audience, images, and the use of comedy (*ibid.*).

But Davies also points out that most scientists are still assuming a one-way transmission of information, there is no return flow of knowledge, but is rather about simply «telling people» (Davies, 2008: 420). Those more experienced in public communication do seem to use more complex models of the public, but they remain bounded by a framework of the ultimate primacy of scientific knowledge (*ibid.*, 429), and this was also evident in Professor Silvertown's talk.

So far much attention has been paid to the communicators, but it is also important to try to analyze the audience, looking for signs of frameworks they use or for attempts of dialogue. An analysis of the Q&A session should provide several clues.

The formal structure of the Q&A session in all events was remarkably similar: it was chaired, consisted of 8-10 questions, and lasted approximately 15 minutes after which the chair closed the session but opened the possibility (which was used) for people to come to the speaker and continue the discussion privately.

An interesting aspect revealed by the Q&A sessions was that the audience used the new information from the presentation and the presence of an expert to reflect on their previous knowledge and opinions. Many questions (about half in the Nature Live event) started by giving a reference to some other information related to the topic («I have read that...» or «I saw in the exhibition...») and asking the speaker to comment on that. This indicates that the audience is actively processing received information trying to relate that to their present knowledge. However, this cannot be described as a dialogue – there is no attempt to influence the position of the speaker, rather it exploits his position as an expert, a trustworthy source to confirm or confute information. So this information in question was not an expert knowledge the person was trying to communicate to the scientist, but a piece of information of which trustworthiness the person was not sure.

There was an attempt to challenge the speaker by bringing up the notion of social Darwinism and questioning whether Darwin himself might have supported that, but that did not really evolve into a longer discussion due to the constraints of the format (which shows that power was in the hands of the chair). If allowed to continue, would that have qualified as a dialogue in the sense of symmetrical learning process (as described by Davies *et al*, forthcoming)? I am not sure.

Usually the members of the audience did not identify themselves, thereby automatically labelling themselves as ‘lay people’. As Kerr *et al* note (2007: 398), self-identification by a member of audience is a very active construction, potentially claiming an identity as an expert on a par with the speakers. This was very clearly the case in Linnean Society event, where it was the chair who identified the person wanting to ask the question, strongly framing the event as a meeting of an expert community. In other events, only once a self-identification took place (in Royal Society) and then the person quickly stressed his non-expert status. Such emphasis on being a non-expert was quite common, usually expressed by phrases like «This might be a stupid question».

The lack of dialogue has also been noted in events whose agenda is explicitly participatory or actively encouraging dialogue, like Café Scientifique. Usually, audience members take the role of interested questioners rather than equal partners in the discussion, Kerr *et al* point out (2007: 393) and this was also the case in events I attended. It seems that the audience readily

adopts the unsymmetrical format of one-way information transfer and aligns with the position of scientific expert, not seeking to be critical.

This can also depend on the topics covered in the events, that were mostly non-controversial and not connected to policy-making. In addition, the bias resulting from self-selection of the audience has effects on the outcome, e.g. it may be that everyone's goal was to get entertained or educated, not to dispute.

In the spirit of PEST, most of public engagement events now emphasize the aspect of dialogue but as we have seen, there is little reason to speak of dialogue in the sense of two-way communication. The events much more seem to serve the purposes outlined by Davies *et al* (forthcoming). They argue that dialogue events that do not seek to influence policy could (1) provide opportunities for empowering individuals for further involvement, (2) be viewed as personally beneficial, or (3) be part of a gradual step by step change in science and society.

It is my feeling that the events I attended were mostly efficient in those regards, I enjoyed them, felt smarter afterwards, did not miss dialogue, but I really cannot say about other people and unfortunately these influences, as well as the effects of bias caused by audience self-selection, are very hard to prove, measure or analyze even with extensive qualitative research on the audience.

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