Naked Science

Evaluation of 18 months of Contemporary science dialogue events

Science Museum Visitor Research Group
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A project run by

science museum

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wellcome trust

Contents

1. Introduction

This report details information and experience gathered from running a pilot series of science dialogue events known as *Naked Science*. The events took place over a period of 18 months between August 2002 and February 2004. *Naked Science* has been financed by the Wellcome Trust and run by the Science Museum with the goal of bringing forward this knowledge into the Science Museum's new events space, the Dana Centre (opened November 2003). A unique opportunity to explore adults-only science dialogue events, the Naked Science series has maintained a commitment to the use of innovative techniques for both evaluation and delivery of its events.

Naked Science and the Dana Centre have a target audience of independent adults aged 18 – 45. It is this audience who have been the subject of extensive research through focus groups, interviews and questionnaires looking at the audience's attitudes, preconceptions, motivations and barriers to engagement in contemporary science dialogue. In addition, all 16 events have been individually evaluated as part of an iterative process that has enabled the series to develop through an increasing understanding of the audience and events over the 18-month period.

2. Background

The Dana Centre target audience of independent adults aged 18 – 45 can be further broken down into different elements according to age, gender, professional background and so on. Whilst there are some differences between the attitudes and opinions of these various groups, there is also a significant volume of information that remains consistent across the categories. By conducting questionnaires, interviews, and focus groups with the target audience both before and after attending an event, we have been able to develop a reliable understanding of the needs, wants, and expectations of the Dana Centre audience, its sub groups and entirety.

2.1 Attitudes to science

Consultation with the audience has shown that the ambition of engaging audiences in a dialogue on contemporary science issues will inevitably have to tackle the preconceptions and prejudices of this target audience. Most notably, the target audience have overwhelming expressed a cynical attitude towards contemporary science and scientists. Whether from an arts or science background the audience has felt this distrust about both the development of contemporary science and how this is articulated to the public. Coupled with this comes a more personal feeling of powerlessness: *'contemporary science is progressing independently and nothing I can say or do will change that '(independent adult in consultation).* Clearly these emotional barriers will affect if and how the audience engages with contemporary science issues. But emotional barriers are not the only force at play at this stage. Of less, but nonetheless significant danger to our audience's engagement is the question of intellectual accessibility. This can be understood as a set of intellectual barriers that prevent a person's motivation, understanding and subsequent engagement in an issue. Perhaps surprisingly, the problem of inaccessibility is seen in both those with a science or non-science background. In both instances, the audience felt put off from discussing a topic if it was not related to their exact field of study.

2.2 Engagement in contemporary issues

Knowing the potential difficulty of engaging the Dana Centre target audience in a dialogue about contemporary science issues, it becomes interesting to explore what positive factors about an event might encourage their engagement. Whilst the audience may fear the prospect of complicated content that excludes their involvement, we have discovered that our audience feel more able to approach a topic that is outside their field of expertise when the content is relevant (relevant to the audience members) and concrete (rather than abstract). For example, speakers should have direct experience of the issues concerned and a genuine interest in the particular topic. Outside the framework of events, it is apparent that our audience as a whole do not often engage in contemporary issues. When engagement occurs, it is always in an area strongly relevant to the individuals concerned. For example, religious groups meeting to discuss their religion in connection with particular issues, or an individual taking part in a politically motivated rally because of its relevance to themselves and their society.

3. Methodologies

The process of evaluating dialogue events poses a number of problems to the researcher. How do you measure something that lasts for a matter of hours only, and is not numerically quantifiable? What is a measure of dialogue, and how do you know if an event has truly been successful? In answer to these questions, Naked Science events have been assessed using a number of innovative methodologies, enabling the evaluator to assess an event and make recommendations. Using a combination of techniques at each event has ensured that the evaluation is robust and can reflect on several different aspects at one event. For example, establishing the profile of the audience may give statistical information, whilst conducting a detailed observation allows for investigation of the quantity and quality of dialogue that is taking place. The different theoretical models and evaluation methodologies used to research Naked Science events are detailed below.

3.1 Model of an effective event

The development of a model that describes what an effective event *should* look like has proved invaluable in describing the successes and failures of each event. The model was developed as an adaptation of Abraham Maslow's work on the self-actualisation of an individual in society, and describes 4 stages in a hierarchy that must be attained for an event to be entirely successful (See Appendix f). If all of the stages are reached (at least in part) then there will be genuine dialogue with longer lasting implications for the participants at that event. At each level, a number of measurable factors determine the event's success. These factors are then used as the basis for evaluation of an event, resulting in a qualitative judgement about specific attributes that should be changed for future events.

3.2 Indicators of dialogue

Establishing whether dialogue has occurred at a particular event, and to what extent, cannot rely solely on quantitative data. Whilst this will tell us how many comments have been made, or even, how many comments were made by women and so on, it cannot be used as a sole measure of true dialogue. Dialogue at events has a complex definition, and accordingly the measure of dialogue

requires a network of reference points and guides. For this purpose, indicators of dialogue have been developed to provide the evaluator with a qualitative guide to measuring dialogue at an event (See Appendix g).

3.3   Detailed Observation
The introduction of detailed observation has allowed us to track dialogue and take note of any barriers to the audience's engagement whilst the events are taking place.

3.4   Questionnaires
Questionnaires provide qualitative information about an event, and have been conducted with the audience and speakers to give the broadest picture. They enable us to uncover a broad spectrum of information such as what participants wanted to change about an event, as well as more subtle information such as what prevented the participants from engaging. Whilst staff working on the night of an event will have some idea of its success, there is nonetheless the potential for discrepancy between their views and the experience of an audience member or speaker. Questionnaires will close this gap and have been conducted using email, the telephone and face-to-face techniques as appropriate to the situation. The use of email questionnaires is a new technique that has proved highly successful over the Naked Science series. Email questionnaires have a high return rate and enable the audience to state their opinions honestly and discreetly.

3.5   Focus groups
Focus groups have allowed us to develop an understanding of the motivations, concerns and pre-conceptions of the target audience. A total of nine focus groups have ensured that this information fairly represents the target audience, and covers a range of their views. In total, 5 differing sub-groups of the audience were investigated over the 9 sessions: local art students, members of the black community, local science students, designers, and a Christian group. Conducted before an event, it is possible to establish the barriers and opportunities that are already in place for engaging this audience, whilst meetings after an event have investigated reactions to the events themselves.

3.6   Accompanied surfs
In addition to the events themselves, online material has been evaluated using accompanied surfs with the target audience. Participants are asked to visit particular pages of the website and are observed as they navigate, or browse for particular information. In this way, any barriers to using the web pages are uncovered, and initial reactions can be observed.

4. Physical events: Key findings

The range of methods described above revealed a number of findings about physical events, which are described below.

4.1. Profile of event audience
The 16 Naked Science Events were attended by a total of 820 visitors. It should be noted that all profiling statistics are based on estimates taken as the audience entered the event.

Figure 1: Age
Throughout the evaluation period the majority of visitors attending events represented age groups defined as core target audience. Only 17% of visitors did not match the age range of 18-45.

Audience Age

17%

83%

☐ Age as % in target audience
☐ Age as % outside target audience
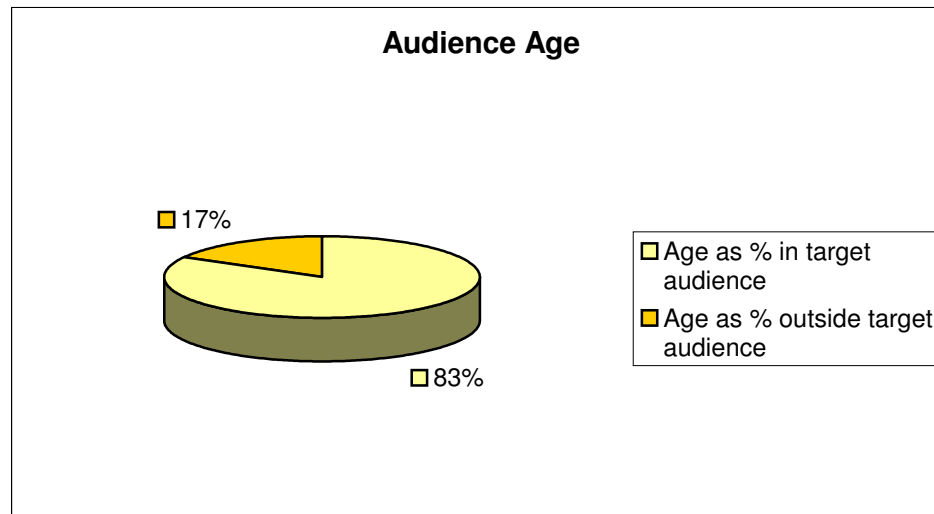
Figure 2: Gender
Overall the events attracted a slightly higher percentage of female visitors. For some events (e.g. MMR, Faltered States, Aids event) it rose to around 70% of the audience.

Gender in Visitors

41%

Gender as % female
Gender as % male

59%
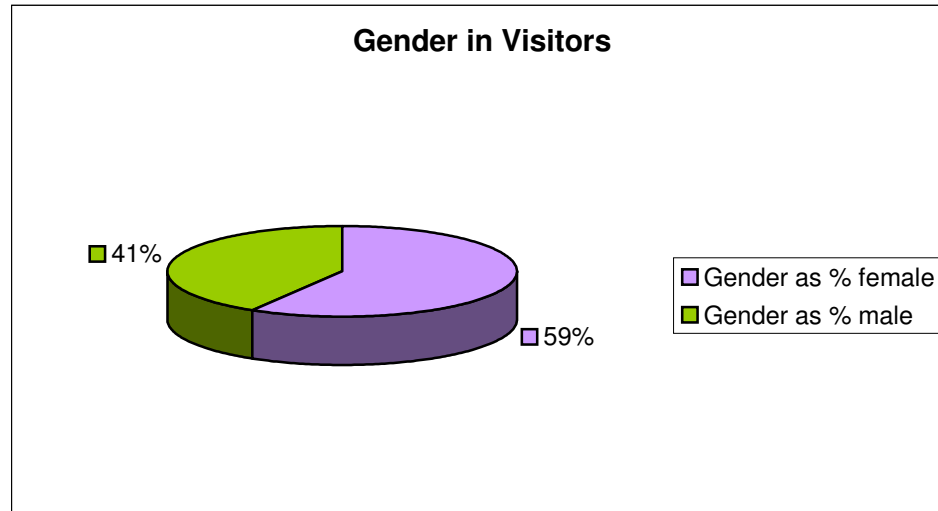
Figure 3: Ethnicity

The following chart illustrates the ethnic composition of the Naked Science audience. The overall proportion of non-white visitors matches the proportion for the Museum's admissions visitors. However, where events were targeted at particular ethnic groups, the percentage of visitors from those groups rose considerably (Motherland 90%; Aids events 56%).

Ethnicity in Visitors

28%

□ Ethnicity as % non-white

■ Ethnicity as % white

72%
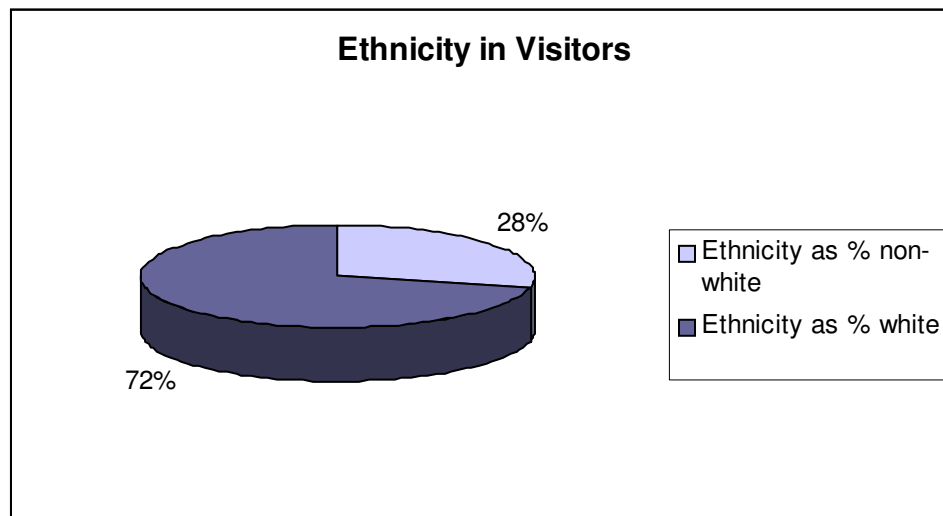
4.2 Qualities of content that will engender successful dialogue

Previous experience has shown that controversy can often be an effective route into dialogue about a topic. For many people, conversation naturally occurs around controversial topics, therefore making it an appropriate focus for further discussion at an event. However, during focus group work, the Dana Centre target audience have proven that they are not easily shocked or wooed by so-called controversy. Whilst this audience is quick to identify the use of 'shock tactics' in the media the ultimate affect of this approach risks being off-putting rather than engaging. Most frequently however, what is supposedly shocking material has become so familiar as to now have a very low impact on this audience, neither engaging or arresting attention. Rather than focussing on a shock impact, true controversy in science dialogue events will emerge by exploration of the factors below. These have been further discussed in the paper, *What is a controversy in science and how can we do controversial events by design*? (See Appendix i). This document outlines a theoretical model for controversy in events, focussing on the *qualities* of what makes a topic controversial. Throughout the series of Naked Science events, this controversy model has been put to the test and confirmed as vital to the engagement of the Dana Centre target audience.

4.2.1 Risk

Topics that contain an element of risk have been seen to encourage dialogue at events. The risk itself might be implied to society as a whole, or on a more personal level. For example, focus group members frequently began discussions about the war in Iraq – a risk to society – whilst others have discussed the risks to the future of their own professions – personal risk. In either case the risk contributes to the make-up of a controversial topic as perceived by the Dana target audience. In terms of event content, a topic such

as MMR at the *Injection of sanity?* event embraced personal risk for those who have a professional interest, or who have a child / friend considering the MMR injection – whilst also bearing implications of a risk to society as a debate about the right to make a choice.

4.2.2 Timely and newsworthy
The focus on contemporary science has enabled Naked Science events to debate material that is current in the media. As a quality of an event's content, being newsworthy is of great importance in facilitating dialogue amongst audience members. Our media savvy audience are likely to be aware of these topics, and might even mean that they are already discussing them. Their familiarity allows the debate to become more approachable. However, this is a double-edged sword for whilst newsworthiness carries positive implications, it is also a quality that may pose barriers to engagement. This will occur if the material in question is so familiar as to have become tedious. "*You're being bombarded by these pictures for so long that we're not fazed by seeing them.*" (Focus group participant) There is a balance to be struck between choosing content that is current and engaging, but not current and monotonous.

4.2.3 Ethical and moral issues
Ethical and moral issues have proved to be a consistent factor in what is seen as controversial material at an event. In this way a topic will provoke the audience's sense of right and wrong, just and unjust, enabling a route into discussion. When the subject in question is complex or requires a particular knowledge, focusing on the ethical or moral implications will allow those who do not have that knowledge to contribute. Personal experience and personal beliefs can act together as a unique set of information about a subject. Whilst the notion of discussing genetics might be excluding for audiences who do not have a background in this area, discussing 'your genetic roots and heritage' with a particular group of people has greater appeal, as was seen in the *Motherland* event.

4.2.4 Personal and social relevance
Whilst inclusion of material that is personally or socially relevant may not stand alone to make a topic controversial, it is nonetheless a constant factor seen in combination with all of the points above. The audience must be able to interpret a personal or social relevance to be able to engage in a debate. Without this, there is simply no motivation for their contribution.

4.3 Formats for events that will engender successful dialogue
Using the above it is possible to develop content that will engage the target audience by providing a route into a subject matter. In addition, it is useful to explore not only *what* is said, but also *how* this is said. In other words, the format of the event itself is critical in facilitating dialogue at an event. Through experimenting with different styles of event we have been able to develop an understanding of the effectiveness of a range of formats for presenting content to the target audience.

4.3.1.   Performance based
We have experimented using performance in a number of different ways to engage the audience in debate. It may be used as both a stimulus for discussion or as integral to the structure of the discussion itself. For example, *Faltered States* was an event that used performance as a stimulus for discussion, containing the performance in the first half with a separate discussion making up the

second half of the event. This event demonstrated a risk that the format does not create true dialogue. Although innovative performance was used at the beginning of the event, a lack of structure to the second half means that any dialogue falls prey to the familiar barriers of the traditional panel debate. However, evaluation has shown that by integrating performance into the structure of the event such as with forum theatre (where actors in character, invited experts and audience members are discussing together) successful dialogue can occur. This technique allows for an exploration of information and opinions through the medium of performance. As the performance progresses, participants are able to develop their ideas and engage in discussion with one another. This format has been proven to help break down barriers between audience members and invited experts, resulting in an informal atmosphere that helps to generate discussion. The actors were able to introduce new information whilst also presenting the social / ethical side of the issues which again, helps to pave the way into dialogue for those members of the audience who do not consider themselves experts in the field.

4.3.2 Talk show style
Naked science has been able to experiment with this innovative format on two occasions, resulting both times in successful dialogue events. The format has been derived from television talk shows such as *Kilroy* where a facilitator has the crucial role of encouraging discussion from the audience. Invited 'experts' are mingled with audience members to break down the traditional panel debate format and encourage an open exchange of opinions and information. Seen at the *Motherland* event, the facilitator was able to use the discussion to identify the expertise of various audience members so that they could be referred to at relevant points in the debate. In this way, the audience become the experts as much as those who have been invited. However, there must also be a period of information giving. Evaluation has shown that an audience will not immediately engage in an event without a period of time in which they can take on any new issues and information. At the *Motherland* event we were able to use a film clip to fulfil this need, whilst at the *Who owns the cure for Cancer?* event with the Natural History Museum, a brief introduction was provided by the speakers.

4.3.3 Gaming
Gaming and competition have proved themselves as motivating factors that will encourage participation during events. Introducing a structured game format enables participants to work as teams discussing the content of the event. However, the *Pub Quiz* event also proved that we must be careful not to loose track of the importance of planning dialogue into the event structure to encourage as much *genuine* dialogue as possible. Although the competition in *Pub Quiz* proved very enjoyable for audience members, it did not result in the sustained dialogue that we have seen at other events such as the game format, *Democs Stem Cell Research.* During this event participants enjoyed opportunities for open and respectful dialogue, and the structured progression of ideas that it affords.

4.3.4 In conversation
Breaking down the traditional panel debate format, yet retaining the use of nominated speakers has allowed us to minimise any barriers to engagement that might have been affecting the audience. For example, by asking participants to discuss in small groups rather than as a large audience body is immediately more intimate, and was proven to be highly successful at the *Animal Experimentation* event. Speakers and audience were able to approach each other informally so that there can be genuine dialogue over a sustained period of time, but with no need for a chair to intervene. The format also enabled us to broach extremely controversial subject matter without risk to participants or speakers.

4.3.5. Virtual Event Style

We have experimented with this innovative format on one occasion. The 4th Room event was housed in a 3D virtual event space, in which moderator, specialists and the audience appeared as avatars. As a web-based activity this event proved to promote science related dialogue and has the potential to be highly appealing to the young Dana target audience. As seen in the 4th *Room* event, online events need to be strongly task driven, rather than a series of long lectures and need to set out why the audiences' opinion is relevant to the debate. Virtual events need a high level of moderation and should be based around truly provocative and controversial subjects in order to generate genuine on-line dialogue.

4.4 At an event: Barriers and opportunities to the audience's engagement

Considerations for an audience's engagement at an event have been divided into four categories: physical, emotional, intellectual and social capital. These relate in turn to physical, emotional, intellectual and social capital needs of the audience, making a hierarchy of needs for each individual. Where obstacles are posed in either of these areas, the potential for engagement is reduced. These differing levels have been defined in closer detail as a model for what an effective event should look like, and can be found in the Appendix of this document as *Developing effective dialogue based Museum events for adults.*

4.4.1 Physical barriers / opportunities

Physical barriers at an event can be considered as anything that affects the physical comfort of the audience. For example, can the audience see and hear adequately? Do they have to stand throughout the event? Is technical equipment functioning in the correct way? At an event where any of these barriers is in place, it quickly becomes apparent that the audience is not able to engage in a dialogue. However, by predicting these eventualities this basic barrier has been easily overcome to ensure that all audience members are physically able to contribute to an event.

4.4.2 Emotional barriers / opportunities

The next level in the hierarchy is to consider the emotional comfort of the audience. Do they feel welcome at the event; do they understand its structure, are they at ease with other participants. Again, if these barriers are not overcome, individuals will not feel emotionally comfortable enough to contribute. Naked Science events have found the importance of ensuring that audience member's expectations of the event are realised and that it does not stray from how it has been advertised. Once an event is taking place, the audience should understand its structure and purpose. Whilst we have discovered that the audience do not always need to know in advance what format the event will take, it is vital that this is made clear to them once the event has started. Speakers themselves can be briefed in advance to ensure that they will be approachable for the audience, and do not use jargon or excluding language.

4.4.3 Intellectual barriers / opportunities

Intellectual barriers might occur if the material used during an event is either too complicated, too easy, not challenging or does not afford opportunities for learning. Focus group work has confirmed that our audience are information hungry, whilst event evaluation has shown that there must be a period of information giving and assimilation before dialogue will occur. At each event, it has been important to ensure that there is enough time dedicated to information during an event, whilst not allowing it to take over the event

where it would again preclude dialogue. Detailed observation has enabled assessment of the dialogue that is taking place to establish whether participant's intellectual needs are being met.

4.4.4 Social capital barriers / opportunities
Engagement at an event itself is dramatically reduced if the audience do not feel that their contributions are worthwhile. For example, does the event lead to a further purpose that will last beyond the night itself? Focus group work has emphasised the importance of this factor in motivating audience members to contribute at an event. Where participants state that they have continued to debate the issues after the event, as at the *Animal Experimentation* event, this can be taken as an indicator of success for social capital.

5. Online events: key findings

5.1 Online audience profile
The chart below summarises the total number of visitors to four discussion boards and the number those who actively participated in dialogue (MMR, Telepathy, Animal and Human Embryos, Stress). The chart illustrates that the majority of people used the discussion boards as a source of information with 8% of visitors actually participating in the discussion to share their knowledge, thoughts and ideas.

Level of Participation in Online Discussions

- 8% No. of Users
- 92% No. of IP Addresses
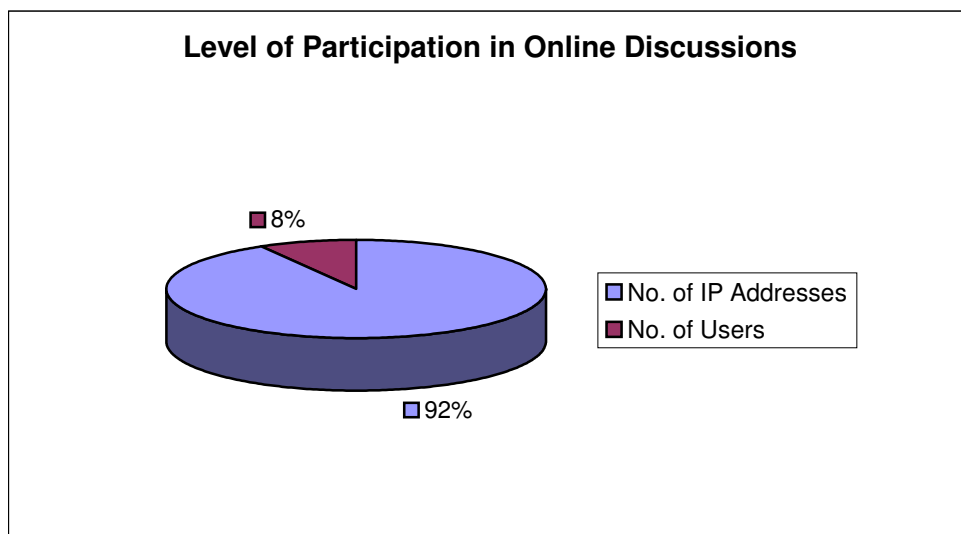
5.2 Barriers and opportunities to the audience's engagement

As with 'live events', participants in an online discussion board experience a range of barriers and opportunities that can be defined as physical, emotional, intellectual and social capital.

5.2.1 Physical barriers / opportunities

Users of online discussion boards may experience physical barriers to their engagement. Whilst some of these are beyond the control of the discussion board operator (e.g. comfort at the monitor) others can be applied. For example, do the target audience understand the design of the discussion board and are users able to successfully navigate? Furthermore it is vital that the registration process is clear and easy for instant access for people to participate while motivation is high. Developmental testing of the Dana website allowed us to discover areas of confusion in navigating the site, and alter these before the Website went live.

5.2.2 Emotional barriers / opportunities

Front end testing with the target audience has revealed that many users will experience some kind of emotional barrier to using a discussion board. Users carry strong preconceptions relating to other discussion board users. For example, are the other users people like me? Will this discussion board be populated by experts? In both cases there is a risk of users feeling intimidated before they have entered the discussion forum. Developmental evaluation revealed that online discussions need a high level of controversy to motivate and engage people emotionally (e.g. MMR online discussion).

5.2.3 Intellectual barriers / opportunities

Members of the target audience who were consulted about online dialogue did not display the same level of interest in discussing issues as at live events. Although users may enjoy reading other people's comments, the motivation to contribute to a debate is much less for users online than at live events. Many people felt intimidated if required to comment on any topic that is outside their particular field of expertise. Equally, online discussion risks being seen as boring when the dialogue is too simple. Thus it is vital that information is given on which specialists are available for participants to talk to so that users feel they can obtain a level of detailed information that will allow them to contribute to the event.

5.2.4 Social capital barriers / opportunities

As at live events, users motivation is increased where they feel that the discussion is leading to a further goal. If a discussion can be seen as 'worthwhile' people will be encouraged to contribute. On the other hand, where discussion has no further remit, the reduced sense of purpose will pose a barrier to users contributing. Evaluation revealed that motivation can be strongly encouraged by using exploratory *(e.g. if you really believe x than why do you…)* and challenging (e.g. how can you possibly justify…) moderation. In addition discussion is particularly successful if distinct camps of opinions are present. Thus enabling participants to look at issues from another angle as well as generating new ideas. Motivation to participate also increased when an initial statement was given explaining why people's opinion matters.

Appendix A
Some statistics from Naked Science events

*This brief profile of the audience members at Naked Science events should be seen as **estimation only**. The information is gathered at the entrance to the event and is based on a sample of the audience rather than all audience members.*

Event	Format	Total numbers at event	Ethnicity as % non-white (NW)	Age as % in target audience	Gender as % female
4th Room (Telepathy)	Virtual Event	19	Data not available	Data not available	Data not available
AIDS: Confronting the Culture of Silence	45 min. film Panel discussion	11	56	100	73
AIDS: Guilt, Blame and Stigma – the black experience of HIV/AIDS	15 min. film Panel discussion	14	57	100	64
Pub quiz	Gaming	31	12	100	59
Cure for cancer	Talk Show	48	Data not available	Data not available	Data not available
Telepathy	Cocktail Format	35	17	78	Data not available
Democs – stem cell research	Gaming	40	23	73	58
Forum theatre	Performance & open debate	30	6	94	49
Faltered states	Performance & Panel Debate	90	8	100	71
Stressed out	In conversation	27	0	37 Note: This event experimented with extending events to a teenage audience. It has therefore been excluded from overall average for target audience.	50
Motherland	Talk Show	112	90	80	60
Animal Exp	In Conversation	48	32	82	54
Injection of sanity	Panel debate	90	Data not available	90	70
Skin Deep	Performance (puppet show)	100	28	60	50
Science of Beauty	In Conversation	100	10	80	50
Stem cells	Panel Debate	100	Data not available	70	55
Total numbers and average profile		**895**	**28.3**	**82**	**58.7**

Appendix B
Audit of Naked Science event evaluation and learning points

Naked Science Event Evaluation
The table represents an audit of past Naked Science events from June 2002 to March 2004. All Wellcome Trust funded events have been fully evaluated

Event	Type of Event	Target and Physical/Virtual Audience	Key findings	Evaluation
"Do Scientists need to destroy human embryos for research? "(Stem Cell Debate) 30/07/02	Rapid response event to breaking news story Panel debate incorporating live link to the Scientist (Dr Verfaillie) in the USA conducting the newsworthy research. Accompanying on-line discussion board	Independent Adults (18-40). Scientists working with embryonic/ adult stem cells. Potential recipients of stem cell treatment Attended by 100 people 55% female 50% 19-35 20% 36-50 30%51 +	Access to the 'real thing' (the scientist directly involved in the ground-breaking work) was an extremely powerful event element for the audience. The live link to the USA was an exciting use of technology. However if the technology used does not work well this reflects badly on us (as the Science Museum). The discussion board structure needs to be simplified to encourage more postings. In future, experiment with the use of position statements as stimuli for discussion board threads.	In-depth Observation E-mail questionnaires

Event	Type of Event	Target and Physical/Virtual Audience	Key findings	Evaluation
The Science of Beauty 26/10/02	Experimented using a fluid event structure with four different overlapping events presented in different parts of the same art gallery. Artist's tour, object handling session, holistic therapists and poetry used to facilitate dialogue.	Independent Adults (18-40), with no specialist science background Attended by approx. 100 80% 18-40 50% female	Handling session was engaging and effective at facilitating dialogue with small groups of people (1-3). We need to explore how we can extend this dialogue to more people when doing future handling sessions. The overlapping nature of the events required more staff to run them than if the events had been run consecutively. This may have an impact on the format of events we choose to do in the future.	In-depth observation Interviews with speakers

Event	Type of Event	Target and Physical/Virtual Audience	Key findings	Evaluation

Skin Deep
 	
22&23/11/02
	Experimented with using a puppet production as a stimulus for dialogue.
	
	Puppet show was followed by a panel debate about issues surrounding normality/abnormality.
	
	The same event was held on two consecutive evenings.
	
	Event free but ticketed.
		Independent Adults (18-40) from an arts background
		
		Attended by 100 people
		
		60% 18-40
		40% 41+
		
		50% female
			Although this event did not work particularly well for this target audience, the exploration of issues through events which used formats other than a lecture was seen as a positive thing. This should be explored further at future events.
			
			It is important that if we use drama or other mediums to present issues, that these are
			   a) pitched at the right level for the target audience and
			   b) are seen to be professional.
			
			The event did have a positive impact on the focus group's views of the Science Museum. Previously panellists strongly associated the Museum with families and scientists, however having been to an event they felt it was aimed a much broader audience, one which included themselves.
			
			The central issue under discussion must be clear to the audience from the outset. This should be worked on at future events.
			
			This event may have worked better with a more refined target audience which included people with disabilities.
				Focus group with part of Dana Target Audience
				
				In-depth observation
				
				Interviews with speakers

Event	Type of Event	Target and Physical/Virtual Audience	Key findings	Evaluation
An injection of Sanity? (debate about MMR) 14/01/03	Antenna exhibition about MMR in Science Museum used as stimulus for a panel debate around MMR. On-line discussion about MMR and link to virtual exhibition. Event free but ticketed.	Parents plus adults with a professional interest in the subject e.g. healthcare professionals, policy makers. Attended by 90 people. Approx. 50% were healthcare professionals 70% female 50% 19-35 40% 36-50 10% 51+	The presence of the exhibition was appreciated by the audience and worked well as the information provision part of the event. Careful consideration of target audience at future events; whilst the presence of healthcare professionals helped provide information, for some this presence was overpowering . We must effectively brief speakers as to what is expected of them e.g. speakers must use microphones. A brief for the speakers will be drawn up. At live events which cover controversial issues there may be defamatory/controversial comments. We need to consider the legal implications of this Chair was perceived as biased which had a huge impact on audience's reaction. In future we must consider carefully Chair's view. Before an event we must fully brief the Chair both about their role and about remaining impartial.	In-depth Observation In-depth interviews with audience members Interviews with speakers

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Animals or human embryos – which should we value more? (Animal Experimentation debate) 05/02/3	Highly controversial subject with accompanying high risk of disruption/activism. Experimented with innovative event structure - divided audience into 4 focus groups which each speaker visiting each group. Event ended with an audience vote. Collaborated with Dana Centre partner, the BA. Collaborated with the Open University who provided the Chair and facilitators. BA also ran live webchat 1 week later.	Independent adults aged 18-40 without a specific background in the subject area i.e. who are not ethicists or scientists working in the field, animal rights activists or research scientists. 48 people attended this event. (53 places were originally booked) 82% aged 19 – 35 54% female 68% white	Splitting the audience into small facilitated groups was very effective at encouraging dialogue both between audience members and between audience and speakers. The vote was oversimplistic and didn't allow audience members to fully express their feelings. We can run an event about an extremely controversial subject area without a) risk to participants b) debate being hi-jacked by single-issue groups	Focus group with part of Dana target audience In-depth observation Interviews with speakers

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Motherland – Is DNA the key to finding your African or European roots? 08/02/03	Event experimented with innovative 'Kilroy' style to facilitate dialogue. Collaboration with BBC and independent production company. Experimented with use of film as stimulus for ensuing dialogue. Online virtual exhibition. Rapid response Antenna exhibition based on Motherland programme in Museum as a result of talks with collaborators before the event.	Members of the Afro-Caribbean community 112 people attended 60% female 90% Afro-Caribbean 40% 19-35 40% 36-50 20% 51+	The 'Kilroy' format worked well with this audience and this issue. We should experiment further with this format with other audiences, other issues and consider ways it could work in the Dana Centre. We need to build on the success of this event of bringing in a new audience to the Museum. This could be done both through the continuing provision of events tackling issues of specific interest to this community and by marketing to this audience for events which do not have a specific niche audience. The film footage provided a good stimulus for event. Collaboration allowed us to put on a much more effective event than otherwise possible increasing our access to experts, audience and unique material (eg a documentary which was being screened in the following week). Valuable lessons about collaboration were learnt.	In-depth Observation

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Stressed Out 01/03/03	Joint event with the Samaritans. Samaritans launched online gallery of young artists work based around stress. June Sarpong (T4, Channel 4) read a poem. Science Museum ran object handling session, Stress Trail and a feedback wall about stress. The whole event took place in the Who Am I? gallery in the Wellcome Wing of the Museum. On-line message board and information relating to Stress placed on Science Museum website.	Young people aged 15-24 27 people attended the presentation and prize giving. Based on observation: • 50% male / 50% female. • 37% aged between 18 – 35 yrs • 19% under 14yrs • 100% white in ethnic origin	When an event is composed of different sections we must make it clear that these sections are related. Valuable lessons about collaboration were learnt. Whilst a message board format on the web can enable people to post their views it is not a suitable format for on-line dialogue.	In-depth observation In-depth interviews

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Faltered States 21/03/03	Firstly a performance of poetry by the four artists – centred on objects from our collections and illustrated by a film (previously shot at Blythe House). This was followed by facilitated discussion with the poets. This event was repeated at Battersea Arts Centre on the following night	Independent adults non-scientists interested in arts and performance rather than science content In total, 90 people attended this event. The percentages below are taken from the sample of 28 visitors (31%) who were questioned at the entrance to the event. The ethnicity of the audience was predominantly white (89%). Only 4% of the audience were Asian and 4% were Hispanic. The gender divide was 25% male and 71% female. 79% of the audience were in the target age range of 19–35. The remaining 18% were aged 36-50.	The audience were very interested in the museum's collection and keen to see our objects. However, we did not take advantage of this interest and there was not enough time for the audience to explore the objects. The audience enjoyed the opportunity for informal discussion with the speakers at the end of the event. There were some emotional barriers to contributing at this event. To overcome these we should experiment a number of options: 1. Trial event formats that are not based around the panel debate. 2. Thoroughly brief the facilitator and provide them with guidance as to the kind of questions that we believe will engender dialogue at our events. 3. Ensure that we create a relaxed atmosphere at the start of the event. 4. Ensure that the event marketing material is an accurate reflection of the event's content. Some audience members reacted negatively to the perceived lack of science content. In future, we should not be shy of using science content and our reputation as a science institution to engage the audience in discussion.	In-depth observation Audience profile Email questionnaire

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Forum Theatre GM Foods 23/06/03	Forum theatre debate about genetically modified food. Theatre debate provided by Kandu Arts for Sustainable Development. Science Museum invited experts to answer audience's questions. Debate run as part of Bionet project and evaluation from this event, led to the inclusion of experts in the audience. Held offsite in the Columbia in Aldwych On-line links to BIONET and other relevant web sites.	Non specialist independent adults aged 18 – 45. There were approximately 30 people at this event. 47% of those asked found out about the event via Time Out. This is significantly more than at previous events where the figure is around 20%. Of the 17 people who completed an entrance survey: 49% female 47 % 19 – 35 47 % 36 – 50 94 % white 6 % black	This event provided successful audience led dialogue about the issues concerned with GM foods. Inviting 'experts' into the audience proved an effective way of introducing new information and informed opinion into the debate without the barriers put up by a traditional panel. The audience at this event were well versed in the issues of GM foods, however, the performance was targeted at an audience with less in-depth knowledge. We should ensure that event marketing and planning reflects the content of the event to appeal to the desired target audience. The formal atmosphere at this event may have posed an emotional barrier to discussion. We should introduce measures to break down any formal atmosphere. This may be a simple as playing music at the start of an event. The venue was constructed around small alcoves. However, this posed a physical barrier as participant were not able to clearly see each other during discussion. Microphones were not used at this event. Again this posed a physical barrier as participants had difficulty hearing each other at times.	In depth observation Profile

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Telepathy 03/07/03	Rapid Response Antenna event to link with content of Antenna exhibition and television programme on Telepathy. Cocktail format where invited guests mingled with audience. Psychology experiments available and footage from programme. Held in Tabernacle Centre in North Kensington	Adults aged 18-40. Semi-local audience who do not usually attend the science museum (disenfranchised) Of the 23 audience members who completed the entrance survey: 39% find out via word of mouth 78% aged 18 – 45 17% of the audience were non-white in ethnic origin.[1]	Audience did not take up opportunities for information provision that were provided. Therefore, dialogue focussed on opinion and did not move on. We should be more forward with the material we provide. Using minimal structure at this event did present some barriers to dialogue. In the future, we should ensure that a structure is in place but without interfering in the relaxed atmosphere that was successful at this event. Despite using a community venue there was no evidence that this event reached a community audience. We should make more deliberate effort to appeal to specific groups, for example by using targeted advertising / tailoring the content to a specific audience. Using music at the start of the event was a successful way of creating a relaxed atmosphere.	In depth Observation Profile Speaker questionnaires.

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[1] This figure can be compared with the museum's ethnicity profile for admissions visitors at 16% non-white. Figures in this document are given either because they represent a significant majority, or where appropriate, are given in accordance to a particular event's target audience.

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Stem Cell Research: What are the Issues? (democs game) 14/07/03	Collaborative event using an experimental game format developed by the New Economics Foundation. The game provides information and gives opportunity for discussion about Stem Cells. No 'experts' were present, but there was a facilitator to give instructions for the game. During the second half of the event, there was the opportunity for more open discussion. This event took place in the Theodore Bullfrog Pub near Embankment tube.	Independent adults aged 18 – 45 who know little about stem cells. Attended by approx 30 people. 12% were specialist in bio-medical sciences 58% female 54% aged 19 – 35 77% white	This format worked well at both providing information, and promoting discussion about stem cell research. The target audience enjoyed and were challenged by this event. The second part of this event presented more barriers to dialogue than during the game play. This time for open discussion lacked a clear focus (intellectual barrier) and it became hard to hear all the participants (physical barrier). In future events, the open discussion should have a purpose that is understood by participants, and that represents an asset to the evening's dialogue.	In-depth observation Profile Focus group of non-specialist young Christians.

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Who owns the cure for cancer? 16 / 09 / 2003	Joint event with the NHM Darwin Centre. Live web cast. This event used the talk show format to generate dialogue. Facilitated by a member of the Darin team. Four invited experts were in the audience. Questions were also taken from the web audience.	Independent adults aged 18 – 45 additionally, the same audience online (esp those who are already on the NS mailing list) • 28% Natural History Museum (web-site and flyers) • 28% Word of Mouth • 17% Time Out • 5% Science Museum (website and flyers) The majority of those asked had a science background. As at previous Naked Science events, there were more women than men in attendance. The significant majority of those asked were within the target age rage for this event of 18 – 45.	The event ran smoothly in logistical terms. Questions were successfully integrated from the web audience, however, this audience was predominantly staff members. The debate itself may not be enough to encourage people to watch the event online. There should be some difference between a web cast and radio broadcast. For example, we should provide additional visual material such as pictures of unique objects to make full use of the web cast. The interval risks being very boring for online viewers. This time should be used to provide other pieces of information and opinion. For example, we could interview individual members of the audience for their views on camera. We should use a 'break screen' to indicate to our web audience that a break is taking place in the physical event. This would also be advantageous in the minutes before an event begins. Experiment with providing a way for online visitors to test the web-cast before the event has begun. This would ensure that any problems they may have are resolved before the event begins. A trouble-shooting option available with the web cast during the event would also be useful.	In depth Observation Profile

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
Pub Quiz 21 / 10 / 03	Using the traditional pub quiz format to engender dialogue and discussion.	Independent adults aged 18 – 45. Non specialist.	Although very enjoyable and successful in other ways, this event cannot be considered as a dialogue event. There were bursts of dialogue but nothing sustained. Was successful at bringing in groups of friends to act as teams.	In depth Observation Profile
AIDS – Guilt, Blame and Stigma The Black experience of HIV/AIDS 01 / 12 / 03	Panel Discussion using a 15min. film to introduce subject issues and to engender discussion amongst panellists and the audience	Adult aged 18-45, particularly black communities Total Number: 14 57% non-white in ethnic origin. 64% female	This event presented a controversial film and panel discussion that generated dialogue with the audience. However, the event did not successfully reach its target audience and visitor numbers were low, suggesting problems with the marketing strategy.	Audience Profile In depth Observation

Event	Type of Event	Target and Physical Audience	Key findings	Evaluation
AIDS – Confronting the culture of silence 01 / 12 / 03	Panel Discussion using a 45min. film to introduce subject issues and to engender discussion amongst panellists and the audience	Adults aged 18-45, particularly Asian communities Total number: 11 56% of the audience were of mixed/Asian origin. 73% female	Although this event presented a highly specialised and enthusiastic group of panellists it did not engender sufficient dialogue. Amongst other problems this appeared to be particularly due to screening a 45 min film, because it is too long to generate dialogue and encourage discussion. The event did not successfully reach its target audience and visitor numbers were low, suggesting problems with the marketing strategy.	Audience Profile In depth Observation.
4th room Feb 04 (Telepathy)	Virtual Event: web-based event using specific tasks and activities to promote science related dialogue. The event was housed within a virtual 3D event space, in which moderator, specialists and the audience appeared as avatars. The subject of discussion was "Telepathy – does it exist?"	Internet connected adults aged 19-45. As this is a virtual event, it is accessible from any geographical location. Total number: 19 6 people used computers in the D-Lounge 13 remote users from other internet connections.	This virtual event format has the potential to be highly appealing to the young Dana target audience. However, if the "4th Room" becomes part of the Dana web-strategy this event strand needs to set out clear short, medium and long term aims and objectives (e.g. social inclusion intellectual/geographical accessibility) in order to become a valuable resource for visitors. Online events need to be strongly task driven, rather than a series of long lectures and need to set out why the audiences' opinion is relevant to the debate for the event to be successful. Evaluation revealed that tasks, strict moderation and issues of controversy need to be increased and more clearly defined.	In depth observation (chat room and participants using internet connections in the d-lounge) Questionnaires (speakers and audience)

Naked Science Evaluation

Developing Effective Dialogue-Based Museum Events for Adults

Alex Burch
October 2001

1. BACKGROUND

This document outlines what an effective dialogue event should be like and the potential barriers to achieving this. A model of good practice has been developed using a pyschology model which outlines five levels of needs which have to be met if an individual is to reach their full potential: Maslow's theory of Self Actualization.

Abraham Maslow defined the levels of need as physiological, safety, acceptance, self esteem and self actualization (see diagram overleaf). These five levels of need are placed in a hierarchy and each level of need must be satisfied before the needs at the next higher level are considered and a person eventually attains their full potential. Thus in Maslow's model, physiological needs (such as the need to eat and drink) are the primary concern and have to be met before a person becomes concerned with their safety. Only when a person has sufficient food, is safe from danger, feels emotionally accepted, gains self-esteem and develops the fullest range of skills possible can they attain their full potential (self actualization).
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2. A MODEL OF AN EFFECTIVE DIALOGUE EVENT

Drawing on this model we have outlined a hierarchy of needs which have to be met if an event is to be fully successful.The modified Maslow model for dialogue events (see overleaf) applies to all participants both speakers and members of the audience. Safety needs have not been taken into account in the adapted model as they are not relevant in this particular case. However, it should be remembered that safety fears such as terrorist attacks may affect the numbers and type of people who will be willing to attend

For a dialogue-based event the levels of needs in Maslow's model have been reclassified as:

Physical; anything pertaining to the physical comfort of the participants – speakers and audience.

Emotional/social acceptance; participants feel emotionally comfortable, they feel that they belong there, they do not feel as if they are being judged. This level could be described as how someone feels that the other participants view them.

Intellectual; all participants feel they have something to contribute, that their opinion is of value, and that they have learnt something.

Social capital; participants feel that they have taken part in something worthwhile and constructive, participants leave with a sense of accomplishment, the effect from attending the event lasts longer than the event itself.

Again each level of needs <u>must</u> be met to at least a reasonable degree before the next higher level of needs can be considered. Thus for an event participants have to be physically comfortable, feel emotionally/socially secure, feel they have something to contribute before they attain a sense of accomplishment. Very few events will make it to the highest levels but the higher up the hierarchy of needs an event fails at, the more successful it can be judged to be.

Diagram showing Maslow's model of Self Actualization together with the adapted model for dialogue-based events.

MASLOW'S MODEL

Individual's Full Potential

NEED FOR SELF ACTUALIZATION
Desire to develop to full potential

ESTEEM NEEDS
Need to gain approval and recognition

ACCEPTANCE NEEDS
Feelings of belonging

SAFETY NEEDS

PHYSIOLOGICAL NEEDS
Food, water

ADAPTED MODEL

A Successful Event

SOCIAL CAPITAL
Participant feels they've taken part in something worthwhile

INTELLECTUAL
Participant has something to contribute

EMOTIONAL/SOCIAL ACCEPTANCE
Participant feels they belong

PHYSICAL
Participant is physically comfortable

3. OUTCOMES: WHAT WOULD A SUCCESSFUL EVENT BE LIKE?

These outcomes are indices of observed participant behaviours, or statements made by participants, which would indicate that the event has been successful. Note, these outcomes refer to all participants (speakers and audience members).

3.1. Physical Needs

- All participants are physically comfortable for the duration of the event (comfortable seating, correct temperature, appropriate light levels, minimal external distractions).
- All contributors can be seen and heard by everyone (the audience, chair and speakers).

3. 2. Emotional/Social Acceptance

- All participants understand the basic structure and purpose of the event.
- All participants feel included i.e. no one feels that they should not be there.
- The target audience matches who the participants perceive themselves to be and who they identify as their peers (age, gender, ethnicity, social class).
- The style and tone of the event is matched to the target audience.
- The location of the event is matched to the target audience in terms of access. Access includes both emotional (e.g. it is not held somewhere perceived to be imposing or dreary) as well as physical access
- The content of the event is matched to the target audience in terms of level, interest and relevance.
- Staff are helpful and respect all participants.
- There is no feeling of 'them and us' e.g. certain participants know each other well and the event is being run for their benefit.
- All participants feel able to contribute. They feel comfortable about contributing, they feel their opinions will be respected and listened to, they feel that the audience will be empathetic or at least sympathetic to their point of view.)

3.3. Intellectual

- Invited contributors articulate their opinions/arguments clearly in a way that is well structured and can be easily understood by all participants. The proposed outcomes of the event are clearly communicated to all participants.
- The event is thought-provoking for its intended audience
- Participants' viewpoints (both audience and speakers) are challenged e.g.valid/powerful alternative views are presented which cause participants to reassess what their own views are and why they hold them; issues are addressed in interesting/different ways.
- Participants learn something from the event (this includes cognitive, affective, social and/or personal learning).
- Participants want to contribute (they have something to say, they feel their opinions are of value to the on-going debate).
- The event facilitates structured dialogue and not just emotional responses/outbursts.
- Dialogue develops between the participants (amongst the audience and between the speakers). Relevant opinions are expressed, participants response to earlier comments by speakers or members of the audience, new ideas and opinions are added to the discussion during the event (i.e. it is not

just the same thing being said over and over again; participants do not simply express entrenched views about the topic).
- Participants add something new to the debate (factual/moral/ethical dimensions)
- Participants viewpoints are listened to and treated with respect by all other participants.
- The event matches who the target audience aspire to be.

3.4. Social Capital

- Participants feel that they are meeting experts/famous people who are involved in the issue and that they have parity with them.
- Participants feel that they have something worthwhile to say to these experts/famous people.
- Participants feel that they have taken part in something worthwhile.
- Participants feel that their voice has been heard; that they have had an effect (on other people, on organisations, on policy).
- Participants feel empowered by the event i.e. their involvement changes from passive to active so that they continue their engagement with the debate/issue after the event has ended e.g. they are motivated to do something, they continue the debate.
- Participants leave with a sense of accomplishment.

4. BARRIERS TO A GOOD EVENT

Barriers are anything which cause an event to fail at any of the four levels of needs; physical, emotional/social acceptance, intellectual acceptance and social capital and which therefore prevent the event from being fully successful. Some of the potential barriers listed below fit into more than one category. These barriers can exist for all participants in the event.

4.1. Physical Barriers

For all events to be successful participants must be physically comfortable. If participants are not comfortable then it does not matter how good the speakers and the debate are, the event will not be a success.

Physical barriers will include anything which affects someone's comfort (e.g. seating and temperature) and which affects their audio/visual engagement with the event. The specific physical needs of the target audience for each event need to be met. This includes consideration of people with disabilities either sensory or physical (N.B. a great number of the population, particularly older audiences, will also have hidden disabilities which are not registered).

4.2. Emotional /Social Acceptance Barriers

These barriers are anything which makes the participants feel socially/emotionally excluded from the event e.g. the impression that they are not meant to be there, that they are not the "right sort" of people to attend such an event.

For this reason it is of fundamental importance that a realistic target audience is set for such events. If the people who attend the event feel that they are excluded they will not be motivated to engage with and join in the dialogue. This will reduce the likelihood of their attendance at a similar event in the future and also of engaging in any kind of further scientific debate.

Other factors which will contribute as a barrier to emotional/social acceptance includes a strong feeling of 'them and us' (e.g. certain sections of the audience know the speakers well and carry on previous conversations to which the rest of the audience have not been privy), the chair and/or speakers show partiality to who they speak to, the event is completely different to what people had expected.

Alternatively, if a participant feels that they will be the only one to express a particular view or that the majority of the participants are not empathetic to their opinion they may experience this as a barrier and not contribute.

4.3. Intellectual Barriers

These are barriers which prevent participants from wanting to contribute. If the event is boring, rather than thought provoking then people will want to leave rather than stay and contribute. If the event does not bring anything new (in terms of ideas/viewpoints/information/moral and ethical dimensions) to a topic then people will not want to contribute; why contribute if you have already heard it all before. If the event does not challenge people's viewpoints then they will not want to contribute; why contribute when you agree with what has been said. The event also has to be intellectually accessible; if people can't understand what has been said then they will not be able to contribute. This includes not only using language and jargon appropriate to the target audience but also presenting clear, structured arguments/points of discussion.

4.4. Social Capital Barriers

These are any barriers which prevent the consolidation of participants' experiences into something which is much greater than just attendance at and contribution to the event itself. The feelings/opinions etc raised by the event should not just end when participants walk out the door. If they do, then the event has not met its full potential. A Dana event must therefore provide a way in which the event can be extended into this to create meaning for the participants. Barriers could include the lack of suitable means or suggestions to continue/facilitate participants dialogue with one another e.g. no feedback system.

Appendix D

Indicators of dialogue

This paper aims to outline a set of criteria for defining when dialogue is taking place during an event.

By dialogue we mean
> *'A process of communication in which two or more participants engage in an open exploration of issues and relationships on an equitable basis'*

Dialogue is the exchange of ideas, opinions, beliefs, and feelings between participants – both speakers and audience. It is listening with respect to others and being able to express one's own views with confidence.

Dialogue is not;
 silence
 chaos
 one person or faction monopolising the session

Evaluating dialogue based events
Dialogue-based events such as Naked Science are regularly evaluated to assess their success. Typically an event will be evaluated using two or more of the following methods;

i)   detailed observation of the event – focussing particularly on the reactions and behaviour of the audience during and after the event
ii)   qualitative in-depth interviews with members of the audience after the event – either selected at the event or part of a pre-invited focus group
iii)   qualitative in-depth interviews with the speakers after the event
iv)   email survey of members of the audience after the event

Using these techniques the researchers will seek evidence for or against dialogue taking place as outlined in the following tables.

What is an effective dialogue-based event?

A model of an effective dialogue based event was developed by Alex Burch (see Developing effective dialogue based museum events for adults Oct 2001). In this model a hierarchy of needs have to be met before dialogue can occur.

- **Physical**; anything pertaining to the physical comfort of the participants – speakers and audience

- **Emotional/social acceptance**; participants feel emotionally comfortable, they feel that they belong there, they do not feel as if they are being judged. This level could be described as how someone feels that the other participants view them

- **Intellectual**; all participants feel they have something to contribute, that their opinion is of value, and that they have learnt something

If an audience's physical, emotional and intellectual needs have been met to at least a minimum standard the possibility of genuine dialogue arises.

Table 1 describes the indicators used to assess i) whether the physical, emotional and intellectual needs were adequately met. Table 2 describes the indicators used to assess whether dialogue actually occurred during the event.

In the following tables
participant = speakers, chair and audience
contributors = speakers and those members of the audience who contribute to the discussion

Table 1: indicators that visitors' basic needs are being met

	During the event	**After the event**
Physical needs	Discussion continues for at least the time provided by the organisers Majority of audience stay to the end of the event Demeanour of audience indicates that they are comfortable, can see and hear all contributors and any audio-visual used Nothing obviously distracts the audience from what the contributors are saying e.g. back-ground noise, late-comers	Participants do not complain about the venue or set-up of the event e.g. sound or light levels, temperature
Emotional/social acceptance	Relevant questions throughout the discussion i.e. little need for chair to intervene to keep the discussion going Majority of audience stay to the end of the event The chair takes a professional and even-handed approach treating all contributors fairly Demeanour of audience indicates that they feel welcome and willing to participate Contributions come from a representative range of the audience not just a small clique	Audience feel that * the event matched or exceeded their expectations * the event was aimed at them and that content was relevant to them * they could identify with other people in the audience * the chair was impartial; all contributors were treated fairly * their contribution was/would have been listened to and treated with respect

Table 1 (continued): indicators that visitors' basic needs are being met

	During the event	**After the event**
Intellectual needs	Audience listens attentively to contributors Majority of audience stay to the end of the event Audience asks many factual questions to elicit new information e.g. What is a stem cell? What drugs are used in euthanasia?	Significant proportion of audience remains after the event to talk to the speakers Audience feel that the event was interesting, informative and thought provoking Audience feel that they had enough information to understand the topic Audience feel that the content was pitched at the correct level for them Audience can describe the gist of the arguments presented during the event

Table 2: Indicators that dialogue is occurring during the event

	During the event	**After the event**
Indicators of dialogue	Discussion requires little or no encouragement from the chair – audience are keen to ask questions or express points of view Discussion moves forward i.e. * new issues are raised that related to previous questions or comments; * the discussion does <u>not</u> get stuck on particular points; * particular lines of discussion are followed e.g. a question is asked, an answer given, a follow-up question is asked, this question is addressed and so on … Audience express opinions and statements of belief e.g. I could never …; cloning is unnatural; animal testing has to be done … **Questions are <u>not</u> predominantly factual e.g. What is a stem cell? What drugs are used in euthanasia?**	Audience appears animated and keen to continue the discussion Participants feel that they had sufficient time and means to engage in the discussion Audience feel that they had enough information and vocabulary to participate in the discussion Participants feel that they have taken part in something worthwhile Participants feel that their views have been challenged (and possibly changed) by what happened during the event Participants expressed increased awareness of / sympathy towards range of opinions on the topic Contributors feel that other participants listened to their point of view Audience feels that they have had an opportunity to meet and discuss issues with leading scientists, experts and policy-makers, on an equitable basis Participants leave feeling inspired to continue the discussion after the event

	During the event	**After the event**

Indicators of dialogue	Questions are mostly
	    rhetorical i.e. a question that aims to make a point and express an opinion rather than to elicit information
	    exploratory e.g. if you really believe x then why do you …
	    challenging e.g. how can you possibly justify …
	
	New, relevant information is provided by members of the audience
	
	Contributors reflecting the language of previous speakers/questioners in what they say i.e. actively listening and referring to previous points or questions
	
	Distinct camps of opinion can be detected among the audience – audience express agreement or disagreement with different points of view
	
	Contributors express their opinions with emotion
	
	Audience readily participates in voting i.e. few, if any, abstentions
		Audience actually do engage in prolonged debate after the event- e.g.
		    in the bar afterwards,
		    with their friends and families,
		    on the Internet
		
		Audience actively participate after the event
		    write to the press,
		    join pressure groups
		    write to/email their MP

Appendix E

Indicators of dialogue - Online

Introduction
During the evaluation of a Dana Centre event, dialogue is assessed using a particular set of criteria, known as *Indicators of dialogue*. These criteria allow the evaluator to establish not only whether dialogue has occurred, but also to what extent it has occurred. The following document takes these criteria as a basis for looking at the dialogue that may take place during an online discussion. Where appropriate, the criteria have been altered for relevance to a discussion board, however their shared basis lies in assessing the physical, emotional and intellectual needs of all contributors. For more information on these needs, please see *Developing effective dialogue based museum events for adults*(Appendix C above). Evaluation of physical events has shown that it is only by fulfilling (at least partially) these differing levels of need that genuine dialogue will occur. Front end evaluation suggests that the same hierarchy is to be found when considering dialogue as it occurs online, albeit adapted to the needs of a virtual contributor. By using this adapted version of the *Indicators of dialogue* for a physical event, we can investigate the occurrence of dialogue in a Dana Centre discussion board.

Please note that this document is work in progress, and may be adapted as we gain more experience of discussion boards and online dialogue.

Background (from original *Indicators of dialogue*)
By dialogue we mean

> ***'A process of communication in which two or more participants engage in an open exploration of issues and relationships on an equitable basis'***

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Dialogue is not
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Dialogue-based events such as Naked Science are regularly evaluated to assess their success. Typically an event will be evaluated using two or more of the following methods;

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• **Intellectual**; all participants feel they have something to contribute, that their opinion is of value, and that they have learnt something

If an audience's physical, emotional and intellectual needs have been met to at least a minimum standard the possibility of genuine dialogue arises.

Table 1 describes the indicators used to assess whether the physical, emotional and intellectual needs were adequately met. Table 2 describes the indicators used to assess whether dialogue actually occurred during the event.

Table 1: indicators that visitors' basic needs are being met

	During the event	**After the event**
Physical needs	Where a discussion board is online for a defined period of time, discussion continues throughout the time allowed. The number of contributors remains consistent or increases during the time that the discussion board is live. Contributors can clearly read the discussion board and any other material displayed (e.g. web stream) understand the discussion's navigation and understand all other contributions that have been posted. Nothing obviously distracts from what the contributors are saying (e.g. oppressive moderation, difficult navigation)	

Table 1 (continued): indicators that visitors' basic needs are being met

	During the event	**After the event**
Intellectual needs	Contributors appear to pay attention to one another. (e.g. by referring to points made by contributors, reflecting the language of other contributors) Contributors ask questions and receive answers that lead to further exploration of the issues concerned	Contributors feel that the discussion was interesting, informative and thought provoking Contributors feel that they had enough information to understand the topic Contributors feel that the content was pitched at the correct level for them Contributors can describe the gist of the arguments presented during the discussion

Table 2: Indicators that dialogue is occurring during the event

	During the event	After the event
Indicators of dialogue	Discussion requires little or no encouragement from the moderator – audience are keen to ask questions or express points of view Discussion moves forward i.e. * new issues are raised that related to previous questions or comments; * the discussion does <u>not</u> get stuck on particular points; * particular lines of discussion are followed e.g. a question is asked, an answer given, a follow-up question is asked, this question is addressed and so on … Contributors express opinions and statements of belief e.g. I could never; cloning is unnatural; animal testing has to be done … Questions are <u>not</u> predominantly factual e.g. What is a stem cell? What drugs are used in euthanasia?	In the case of a discussion board that takes place over a defined period of time, participants feel that they had sufficient time to engage in the discussion. Contributors feel that they had enough information and vocabulary to participate in the discussion Contributors feel that they have taken part in something worthwhile Contributors feel that their views have been challenged (and possibly changed) by the discussion Contributors expressed increased awareness of / sympathy towards range of opinions on the topic Contributors feel that other participants understood their point of view Contributors feel that they have had an opportunity to meet and discuss issues with others, such as leading scientists, experts and policy-makers, on an equitable basis

	During the event	After the event

Indicators of dialogue	Questions are mostly
	    rhetorical i.e. a question that aims to make a point and express an opinion rather than to elicit information
	    exploratory e.g. if you really believe x then why do you …
	    challenging e.g. how can you possibly justify …
	
	New, relevant information is provided by contributors
	
	Contributors reflecting the language of previous speakers/questioners in what they say i.e. actively listening and referring to previous points or questions
	
	Distinct camps of opinion can be detected among the contributors – contributors express agreement or disagreement with different points of view
	
	Contributors express their opinions with emotion
	
	Site visitors (not necessarily contributors to the discussion) readily participate in voting i.e. few, if any, abstentions
		Contributors want to take the discussion further after the discussion board has closed, or after they have contributed e.g: Audience actively participate after the discussion
		    write to the press,
		    join pressure groups
		    write to/email their MP

Appendix F

What is a controversy in science and how can we do controversial events by design?

Summary

- The Dana mission states that it will be a place where public and scientists to engage in open, challenging dialogue about contemporary issues of public interest – by dealing with controversial science-based issues will can achieve this objective
- Evaluation of past exhibits dealing with controversial topics has shown that the public engages with, enjoys and are challenged by controversial exhibitions. The 'Tell' feedback stations dealing with controversial topics of the Wellcome Wing are popular and frequently used.
- The Science Museum does not have a good record of being able to judge the controversial nature of a subject and to there-by stimulate debate and dialogue. Accident rather than design have produced controversial exhibitions. Controversial events have not been evaluated so we have no record of what was successful and engaged the visitors in debate (see Appendix for list of past controversial events).
- By defining exactly what a controversial issue is, we can formulate a strategy for why and how we deal with an issue as an Institution.
- Our strategy for dealing with controversy can be informed by distinguishing between two types of science controversy. *Scientific-fact controversy* and *science-based controversy* which are 'disputes with a heavy ethical or political overlay'. It is the *science-based controversy* that we should concentrate on in our strategy for developing dialogue events in the museum.
- This document suggests a model of parameters to use to gauge and maximise the controversial nature of a *science-based* topic.
  - This model gauges the levels of the following values which are associated with controversial issues:-
    - Risk
    - Newsworthy and relevant
    - Timely and relevant
    - Ethical issues
    - Moral issues

  - This model should be incorporated into a scheme for evaluation strategy that tests what issues our target audience finds controversial
  - This model can also be used to put a controversial spin onto an issue to provoke a controversial and engaging event that is achieved by design rather than by accident.

Introduction

The Dana mission statement is as follows:- To be a lively venue that encourages the public and scientists to engage in open, challenging dialogue about contemporary issues of public interest.

We especially value:
- Risk-taking
- Innovation
- Topicality
- Provocation
- Rapid response
- Partnership – being partner of choice

- Inclusivity
- Our neutrality
- Accessibility
- A buzzy environment

Dana style events – allowing the public to set the agenda, But how do we achieve this?

In order to achieve the mission statement we have determined that we will be a platform for debate, dealing with controversial issues that matter to our target audience. These issues must be the type of subject that are important and engage our target audience in debate and dialogue. We intent to determine what these issues are by using the evaluation strategy and by a mechanism of open feedback (perhaps electronic) to establish what these constantly changing controversial issues are. Thereby ensuring that we define issues that the audience find controversial rather than the museum deems to be controversial. By doing this the Dana centre can achieve its objective and deal with controversial issues openly and in a predetermined manner.

Why is controversy important in Science Communication and the work of the Dana centre?

Controversy is important in science communication simply because it is important in science. 'Controversy is important because it is an essential element of our every day lives. Controversy is the lifeblood of politics, the arts and law – without controversy there can be no change and without change there can be no progress in the field of human endeavour.' (Chalmers, 1994).

We have had experience of actively seeking to cover controversial topics in exhibitions such as the Wellcome Wing *'Who am I?'* gallery, *Talking Points* Euthanasia Machine, *Tell* exhibits and others e.g. *Future Foods, Genetic Choices, The Great Fat Debate.* These exhibitions were intended primarily to show our visitors how open-minded we are as an Institution and have provided us with a great deal of experience and knowledge in terms of evaluation data. Controversy in event format has been frequently, performed (see list below), however this has never been evaluated and no real data exists as to how these events were received and if they were actually considered to be controversial. Which verifies our strategy of evaluation of all our future Dana events objectively.

We know from the results of our exhibition evaluation that controversy is appealing to our visitors, attracts publicity, and attracts a wider audience of non-scientists. Evaluation feedback clearly indicates that there is a demand for more information regarding controversial issues to be given to our visitors. However, it is widely recognised now that the museum does not actually 'do' controversy very well – we do controversial exhibits by accident and not by design.

By a trialling a series of well structured programme of events for Dana centre we intend to be able to deal with controversy in a proactive and more importantly a premeditated manner, conducting controversial programmes by design rather than by accident.

Controversy – defining its meaning

For the purpose of our selves as an Institution, the way we handle any criticism we may incur, who we invite to convey these controversies and how we handle the difficult issue of our own perceived 'neutrality', we must first define what controversy is.

Controversy is a *dispute* which contains the following elements:-

- Differing opinions between stakeholders groups of antagonists regarding a common concern
- A controversy creates interaction
- Which is displayed and broadcast by a public medium e.g. the media or even a museum display itself
- Which involve 'experts' – individuals who have specialist knowledge or vested personal interest/experience in the topic concerned
- Contains destabilising knowledge i.e. the potential for the received wisdom to be changed
- It has a certain endurance in time and space

In general, a controversy is not a dispute involving one person, nor one that is over rapidly. A controversy exists over a longer period of time and divides groups of people. Thomas Brante 1993, *Controversial Science From Content to contention* edited by Brante, Fuller & Lynch

Brante makes a distinction between two types of science controversy, *Scientific facts and Science-based controversy. Scientific facts* controversy primarily concerns contending *knowledge claims* where the parties have scientific status. A *science-based* controversy typically includes several factors with a heavy ethical or political overlay.

This distinction is extremely useful for us to formulate a strategy for dealing with controversy in the Dana centre.

Scientific-facts controversy
In this case it is only the results of scientific study that can inform this debate and the science may not be clear-cut. Two examples of this type of controversy are;
- Did Western doctors cause the HIV pandemic in Africa in the 60s by injecting children with the polio vaccine grown in monkey cells? Thereby inadvertently encouraging SIV virus to change to the virulent human strain?
- Do Higgs-Boson particles really exist?

These debates can be hot, even damming, for relevant scientists within their fields. They are essentially debates that can be held only between experts with differing opinions and knowledge base. The general 'lay' public will not be informed enough to join in the debate. However, in the case of the HIV debate the vested interests of the non-expert audience is global – a health issue like HIV effects everyone to a lesser or greater extent.

This type of scientific-fact controversy has huge public interest and is exactly the type of event we should include in the Dana centre. These events will be run by featuring different scientists as the experts (or individuals like the author of *The River* who had educated himself to be equal to the scientists) and the main protagonists of the debate. The visitor is invited to participate as spectators, and to seek knowledge and understanding from the experts or mediators. The visitor is then invited make up their own minds on the issues. However this is essentially a learning process, what is commonly called 'informed debate'. An example of this was held in Paris at La Cite about BSE. This is model where the current PUS establishment are working to carry forward in the recent movement towards 'dialogue' events– their emphasis is still on 'informed' debate.

However, examples of scientific-fact controversy such as the Higgs Boson debate, though they are hotly disputed between scientists only appeals to a select non-scientific public interest – these debates are often only interesting only as a

spectator sport. They have limited public appeal. These types of scientific-fact controversy *should not* be included in Dana centre series of trialled programmes.

See below * for a model on How to test the 'controversial' nature of a topic and its public appeal.

Science-based controversy
A science facts-based controversy typically includes several factors of various kinds crucially affecting the outcome of the dispute. They are 'scientific disputes with a heavy ethical or political overlay' Brante 1994. Our modern welfare societies are riddled with this type of controversy. For example, whether mobile phones are bad for our health, the embryonic stem-cell debate is this the slippery slope? etc. These controversies necessitate scientific experts, but also non-scientific experts who have parity in knowledge – on the understanding that science is not the only knowledge base that can provide input into the dispute. These types of issues can include the following elements

- Issues often centred on risk; on issues relating to environment, political, financial, medical
- Newsworthy, current and relevant/interesting to the lives of our target audience.
- Timely and relevant to a social context and are different for different target audiences e.g. cyber nannies are not interesting to University Students, flooding issues not interesting to an audience during a water shortage in summer, Foot & Mouth more relevant to farmers than nurses.
- Ethical issues which effect our visitors personal sense of ethical knowledge and feeling – this knowledge base is one that is often built on religious values, i.e. based upon a sense of right or wrong, just and unjust, Godly or ungodly,
- Moral issues which effect our visitors sense of social consciousness, this knowledge base is one that is often built on legal rulings, codes of conduct practise, political rules, governments, religions.

It is these types controversy, which should form the majority of the debate and activity in the Dana centre. It is science-based issues that are relevant and worrying to our visitor. It is this type of controversy, following the above parameters, which also allows our visitors to 'set the agenda'. Science-based issues are also of the type which have no clear 'expert' base. Scientists and the PUS movement have often conflated 'scientific-facts' and 'science-base' controversies in the past and the automatically excluded the non-scientist from the debate. By distinguishing between the two and stating that science-based controversy involves different stakeholders with knowledge base other than science we can achieve the Dana centre's mission statement and values.

Model to maximise the controversial nature of a subject and subvert a 'scientific-facts' controversy into a 'science-based' controversy

In most cases we can put a spin on a particular topic to engender a greater sense of inclusivity, to ensure that the visitor understands that they can have an opinion even though they are not expert in the particular area.

For example, Drugs in Sport – this topic is controversial in a wider social context especially as the exhibition coincided with the Olympics. The topic was dealt with by the Antennae team by providing a large amount of information about the physiological effects that performance-enhancing drugs can have on the body of athletes, the dangers to long term health as well as the improved performance. Essentially it was treating the subject as a 'Scientific expert-based' controversy.

This information was well received and past experience has shown us (Genetic Choices evaluation) is that our visitors do require information about the topic, they what something they don't know already. However, this exhibition as it was presented was not controversial. By presenting the information in terms of science-fact we did not involve our visitors, by allowing them to include their knowledge base to engage in the exhibition. Please note this is meant as a study not a criticism.

By using the above five science-based controversial parameters we can test the way the topic was handled to score a sense of 'controversiality'

- Issues often centred on risk; medical yes, however the risk was to athletes – but not the visitors' health themselves – *low score*
- Newsworthy, current and relevant/interesting to the lives of our target audience – newsworthy in terms of the Olympics – *High score*
- Timely and relevant to a social context and are different for different target audiences – *High Score*
- Ethical issues which effect our visitors personal sense of ethical knowledge and feeling – We were not asking our visitor if taking drugs in sport was fair or unfair gave some richer nations, with more advanced scientific knowledge a unfair advantage, *Low score*
- Moral issues which effect our visitors sense of social consciousness, this knowledge base is one that is often built on legal rulings, codes of conduct practise, political rules, governments, religions. We were not taking a stance and asking our visitors the question whether drugs should be made legal and there by allowing open access to the drugs, sport is now a competition of the pharmaceuticals rather than training, a will to win and a good dose of genes. *Low score*

Drugs in Sport are only controversial if you appeal to the non-experts sense of *ethics* i.e. fairness, *risk* – how dangerous to the health if they were an athlete (i.e. Is it worth it? Would you take this drug if you were an athlete and risk dying at 40), *timely* and *relevant, morally* right or not – is there another opinion rather than the present law – should we change the law?

Conclusion

By using the above parameters we can testing a particular topic and put a more controversial spin on to it. We can then judge the controversial nature and context of a topic to test in formative evaluation studies. Here we can ensure that a topic is not just controversial to us as an Institution but is controversial to our audience. Then it maybe possible carry out controversy by design rather than by accident.

It may also be possible to include our visitors in the debate by treating science as a subject, which has a social context and consequence, 'science-base' rather than 'scientific-fact', to which everyone has a right to an opinion regardless of how 'informed' they are.

Note

Controversial events carried out in the past by the Science Museum that were not evaluated include the following:

Euthanasia debate
Swedish science debate
6thform talks – forensic

Energy forum debate

Summer 2000
Who am I events
Pregnant Man drama role

1000 years of Science
How to Cheat at Science
Talk by Sarah Angliss and Tim Hunkin
Pseudo-science and science fraud
Oct 99

Polar events
The haze, the hole and the vortex
Demonstration by Barbara Keating
Controversary surrounding discovery of the thinning of the ozone layer
Oct/Nov 98

Crime Events – Summer 98
Illegal Engineering
Talk by Tim Hunkin
Ways ingenious criminals used engineering to break the law

Framed by Photography
Demonstration by Claire Bonham-Carter
Manipulation of images

Insect detective
Demonstration by Dr Martin Hall, NHM
How maggots and flies are used to detect murders

The listening bug
Demonstration by Jack Challoner
Telephone tapping and bugging

Bodysnatchers
Tour by Heather Mayfield
Body snatchers

Future Foods 97/98
Science Show to accompany exhibition
Genetically modified foods – visitors tasted tomato paste, ask questions – lots of discourse

Water events Feb98
Dowsing: fact or fiction?
Talk by Michael Rust, British Society of Dowsers

Science of Sport events Oct 97
Banned
Talk by Josclyn Hoyte-Smith
Issues behind drug testing in sport and examples of tests.
Very good but poorly attended

Challenge of Materials events 97
Threads of life

Drama performance
Mental health of Wallace Carothers, inventor of nylon

Drama Events 97
How to cheat at art
Talk by Tim Hunkin
Technologies used in printing, copying, photography and digital images – manipulating

Big Bang 96/7
The dating Agency
Workshop by Antonia Watkins
Radiocarbon dating workshop – controversial in the sense that some visitors did not believe in the big ban theory

Set 95

Infertility Maze events – Jan/Feb 95
The Infertility Maze: why are we here? – forum look at some of causes of fertility problems, the various stages of diagnosis, implications from both male and female perspective

Panel: Paul Lewis, Deputy Medical Director, Bourn Clinic, Jennifer Hunt, Senior Infertility Counsellor, Hammersmith Hospital, Dr Sue Gould, Endometriosis Society, John Dickson, Issue

Ways out of the maze – foum looking at options both medical intervention, adoption and surrogacy

Panel: Dr Simon Fischel, Scientific Director of Nurture, Geoffrey Trew, Senior Registrar, Hammersmith Hospital, Sue Jacobs, Adoption Specialist, Kim Cotton, Childlessness Overcome Through Surrogacy

Women's Health and the Infertility maze – panel of speakers explore relationship between women's health and fertility

Panel: Prof Ian Craft, London Gynaecology & Fertility Centre, Diane Carlton, Endometriosis Society Trustee, Dr Neil Ward, Foresight Scientific Advisor, Prof Shelia McLain, of the University of Glasgow, Meredith Wheeler of BICA

Endometriosis: what questions to ask? Workshop facilitated by Dr Sue Gould of Endometriosis Society

Prospect Support Group – evening events , a support group for patients attending fertility clinics at the Hammersmith and Royal Masonic Hospitals, opened their support group to non-memebers, Robert Winston speak at this event

Health Matters events Autumn 94
The Natural Health Service
Talk by Graeme Miller of the British Complementary Medicine Association
Alternative treatments

Changing Genes
Workshop by Jack Challoner and Karen Davies
Gene therapy

Science Fiction 92/3
Talk by biologist, Jack Cohen
How to design an alien

Ozone Events 92/3

Poetry by Sarah Lawson
Environmental issues behind ozone depletion

8 Dec – Ozone Depletion Question time
Evening event

James Lovelock answers questions

Laser events 92
Talk by Ken Creer, Chief Photographer at the Meteropolitan Police Forensic
Science Lab –
Subject matter of the event gruesome

DNA events 92
Talk by Peter Martin of the Meteropolitan Police Forensic Science Lab
Subject matter of the event gruesome

APPENDIX G
Focus Group Reports

Dana Centre User Group Report

Royal College of Art students

Meeting 1

Alex Burch
June 2002

1. INTRODUCTION
As part of the formative evaluation for the Dana centre, the Science Museum is running a series of user groups with members of the target audience. The first user group was held with Royal College of Art graduates. These are all people who work in the local area.

2. METHODOLOGY
Two gatekeepers from the Royal College of Art (RCA) were used to recruit RCA graduates for the user group. The group consisted of nine people all of whom were, pre-family adults and in their mid 20's to early 30's. Members of the user group were either at the RCA conducting postgraduate work or had graduated from the RCA and were now working. The user group was held in the evening, in the RCA bar and lasted from 6.30-8pm.

This user group covered three main topic areas
• What makes an issue controversial
• What would get them engaged in an event
• What constitutes a good event/bad event

All conversations were recorded and detailed notes were made for later analysis.

3. RESULTS
3.1. What Makes An Issue Controversial?

• The issues which were controversial for this group were those which involve risk and/or moral/ethical dimensions. Often a controversial issue encompassed all three of these factors.

• The elements which particularly made something risky were; potential misuse of science and the commercial uses of science. The panellists often connected misuse and commercial use.

   "There is an insurance risk [with genetic decoding] – will it be used against people – for example to prove greater risk of heart disease"

   "..Inhuman agenda where real health risks are ignored"

• The misuse or commercial use of science also formed main elements of issues that were morally/ethically controversial.

   "Companies regulating part of genome without knowing what that part of genome is about. This is against what I believe in."

• *In addition morally/ethically controversial issues often contained an element of people feeling helpless; i.e. that they didn't have any control over the research.*

   "CCTV – facial recognition, you can track people – How public is public?"

• There was some evidence that an issue also had to be personally relevant . For example transgenic art (artists making unique organisms through genetic manipulation) was deemed to be interesting to them as arts graduates but the majority of group were not interested in MMR simply because they were not parents.

3.2 Attitudes to Controversy

- Panel members felt that we shouldn't be afraid to be controversial. Presenting controversial views was a way of stimulating debate. However, they felt that we shouldn't be sensationalistic.

"Has to be an informed controversy"

- They all said that they didn't mind that in being controversial some people might say offensive things. They all felt that that was part of life. Furthermore, for some of the panellists being overly politically correct was a bad thing as it detracted from issues.

3.3. General Attitudes Towards Science

- There was a general considerable cynicism towards contemporary science. It was felt that science was politically or economically driven. There was a general concern about commercialism driving scientific research.

"Who decides the agenda for science? Who is funding it?"

- They felt a certain helplessness towards science in that it was something that they couldn't influence, suddenly it was there and they hadn't had any choice in the matter. Several people used the analogy of science being like a train that once set going you couldn't stop or change the direction of.

"No-one is voting on these decisions it just happens. There is no straw poll saying 'Do you think this is a good idea?'"

3.4. What Prevents Involvement with Science Issues.

"What prevents me is a cynicism. Don't feel it will go anywhere – so can't be bothered to get off my arse"

- The majority of people felt that science was in someway inaccessible to them. This was partly because it was seen as something done in laboratories with huge research grants. Science was also seen as intellectually inaccessible and removed from them.

"As an ordinary person you can't engage with the technical side of things".

"With science it is always easy to assume that someone knows more. That might put you off having an opinion. You might look foolish"

"Science is on a pedastal. Removed from self"

3.5. Attitudes to Sources of Information

- Some panel members felt that they required a certain level of information about an issue before they were able to engage in a debate about it .

- However, members of the user group were very cynical about sources of scientific information. They felt that you could only get information through controlled sources; the media, the Government, big business. The media was perceived to be sensationalistic and presented information in a way that made a good story. Some members of the user group also believed the media to be biased. Furthermore, people felt that the information which got into the papers only came from the Government. Science information/reporting was not seen as objective.

"…e.g. MMR, the only information you get is from the Government anyway"

3.6. What Would Make a Bad Event?

3.6.1. Before the event

- The language used to advertise an event was important. Panellists found sensationalistic language off-putting and equated it with tabloid journalism. They didn't like rhetoric or propagandist language. They did not like the journalistic practice of using an individual to represent an issue as they felt this made the individual a victim and made them the issue. Also one panellist mentioned that she didn't like overly politically correct language as she felt that took away the focus from an issue.

3.6.2. At the event

- The choice of speaker was important to this group. The speaker had to be credible i.e. proven track record in field they are talking about. The speaker also had to be genuine i.e. truly interested in what other people (the public) had to say rather than just interested in "name-dropping"

  "For me the credibility of the speaker e.g. we have people speak to us who have spent all their time in academia and have never done anything practical".

- For one person what the lecturer looked like was also important – a white, middle-aged man would be off-putting and is what sprang to mind in conjunction with the Science Museum.

- Everyone agreed that the information had to be pitched at the right level. Most people feared attending an event where they didn't understand a word of what was being said.

  "[I would fear] being forced to sit in there if you couldn't understand. Sitting for an hour in complete ignorance"

- However, they felt that the information must not be pitched at too low a level.

  "…but it is also being pandered to – that is even worse"

3.7. What Would Prevent People from Contributing at an Event
- The panellists mentioned a mixture of physical, emotional and intellectual barriers to contributing.

- One person said if they couldn't be heard then they wouldn't contribute – they would think "*why bother asking a question if no-one can hear you?"*

- It was important that people felt emotionally comfortable. It was important that offers to contribute were genuine and that speakers really were listening to other people's viewpoints. It was also important that there were an "optimum" number of people contributing – too few and they'd feel silly, too many and they wouldn't bother.

- The presentation of lecture from behind a lecturn was seen as a barrier. Instead several people suggested integrating questions within a lecture to generate a more informal feel.

- People using specialist, technical jargon would be a barrier to contributing. One person suggested that it was better to ask the how's and why's which would facilitate contributions.

- Some of the panel members felt that they required a certain level of information before they could engage with an issue. Someone also raised the point that it takes time to process new information.

"If it was a subject that I didn't know anything about that would make me panic – being asked your opinions about things which you knew nothing about".

"At straight lectures often don't think about content until on the way home and then you think of questions – before then you are concentrating on understanding."

3.8. What Event Would They Organise?

- The two main points that emerged were that they would organise events which made issues personally relevant and events that would provide them with concrete experience of something.

"How it directly affects people because don't look much out of your own sphere. What really matters is on a day to day basis, because suddenly it is my space/my environment".

"Something that you could touch and hold, then you could make a decision, tactile experience instead of just seeing it"

3.9. Topics that they would like to covered

Gene patenting
Problems affecting local communities
The nature of truth/Why science lies and cheats/tweaking scientific data/scientific methodology
Great scientific frauds
Creepy science/Frankenstein science/grossness of science
Exhibition on God
Holistic medicine

Report on the second Dana Centre focus group

Royal College of Art students

Meeting 2

Alex Burch

The second focus group held at the Royal College of Art consisted of 10 people, of which 7 had attended the first focus group and 2 had attended previous events. All panellists were graduates of the RCA, independent adults, aged between mid 20's and mid 30's.

The 10 panellists attended the cloning event. This event consisted of a 20 minute drama presentation, followed by 40 minutes discussion with an ethicist about cloning. The panellists were then split into two groups and attended a focus group that lasted 40 minutes.

This report concentrates on the strengths, weaknesses, opportunities and threats mentioned. These have then largely been coded as physical, emotional/social, intellectual and social capital according to the Maslow Pyramid for events.

STRENGTHS
Emotional/Social Level
- The panellists liked the informality of the event and felt this made the subject more accessible.

  "It's more accessible in this environment than in a lecture theatre"

- Several panellists mentioned that they liked the intimacy of the event. They appeared to feel more comfortable about contributing if they were in smaller groups.

- The event was largely pitched at the right level and they did not feel that it was patronising

  Intellectual Level
- The panellists found the event enjoyable, engaging, thought-provoking and challenging.

  "[I] came away with more questions"

- The event successfully introduced a fresh angle to the subject which prompted the panellists to think about the issue in new ways. They liked the fact the event presented a very human angle to the issue. This was very powerful for them.

  "The first part, the play, was openly raising questions that you could engage with in your own head after taking the legal and technical points"

- They liked the idea of using drama to address scientific issues

  "I enjoyed it – it was nice not to have people just talk at you"

- They felt the drama was good at introducing the emotional elements and engaging people in the issue.

  "Really effective, immediately engaged by the drama…"

- The idea of the vote was seen to be good. People liked the interactivity, the ability to see what other's thought, to record what you felt, to force you to have an opinion. About half the panellists liked the actual vote that occurred at the event.

- For half of the panellists the information level was about right to engage them in the issue.

- One panellist even felt that it may have changed her opinion of the subject.

  "It may have changed my opinion ….I'm primarily of the belief that science shouldn't mess with nature because of side effects, disbelief in the powers of science, but now I'm opened. I'm not saying that I believe, but I'm more open to think about it"

- About half the panellists felt that they had learnt some new facts about the issue.

  Social Capital Level
- The panellists felt that having attended the event they would be more confident about talking about the issues it covered.

- Many of the panellists also felt inspired by the event to engage more in the issues raised.

  "…I might read a newspaper article now (which I didn't before) and try to learn more"

WEAKNESSES
Emotional Social Level
- Although all the panellists liked the idea of using drama, about half the panellists found this particular drama "too theatrical". This was off-putting, being seen as either "intimidating" or "aimed at children"

- There was also the feeling that the presentation (imagery) used was not pitched at the right level. The visualness of the event was particularly important to this audience (art graduates).

  "the visual aids were a bit of a joke – a limp carrot and some cardboard placards. Some really good imagery to illuminate the science process. Not so 'child-like'".

- Some panellists felt that they didn't understand the basic structure of the event. This affected their enjoyment of it.

  Intellectual Level
- All the panellists asked for more information.

- Panellists felt that the debate itself was not informed. They did not like the fact that arguments were not backed up with scientific facts, some of them did not like the "subjective" viewpoints of the ethicist and most of them felt that they could not contribute to the debate because they themselves did not have enough information.

  "Need someone who could step in and at least get the facts straight. Felt questioner was 'irresponsible, subjective'"

  "…I didn't know enough to join in"

"Fact that the speaker [the ethicist] not a scientist, too personal, 'catty'. Not sure where she was coming from, what her motivation was".

However, for some of the panellists the fact that the speaker was subjective was a strength; revealing the human side to academics.

- For some panellists the vote was too simplistic and did not allow them to explore their attitudes towards the issue in sufficient depth.

- The panellists felt that the information presented in the drama did not match the type of information needed to enter the dialogue. Furthermore the ethicists talk was mismatched in style/questions raised to that of the drama. For at least one panellist this prevented her contributing.

"The information provided before [by the play] was not consistent with the debate that happened".

"I felt trivialised, couldn't ask what I wanted to say 'Well do you feel like a Freak?" I couldn't as the intellectual levels were so far apart.

THREATS
- Information provision is essential. Without information people cannot engage with and enter the dialogue.

- There must be a balance between opinion and information. An event cannot be based purely on opinion, it must provide information. There is no conflict between providing both. In fact information was seen as intrinsically necessary if interesting and informed debate is to occur.

  "I don't think there is a conflict, need to balance, provide fact to give informed opinion then debate on an open forum"

- A balance between information and opinion has to be present in both the speech/drama and in the ensuing debate i.e. the presentation should present some information, the debate should not just be opinion based.

- Panellists felt that they needed a certain amount of information to engage in and contribute to a debate. At this particular event many of the panellists felt that they did not get this and therefore did not contribute. If dialogue is to occur then all participants must feel confident about what they say, this confidence will be partly based on the belief that they understand underlying scientific principles and they have used terminology correctly. Developing this confidence in all participants is particularly important if we are to avoid generating events where only the usual suspects/people from single issue groups speak. This is important if we want people to walk away feeling more informed, more confident, more engage in the issue.

- The credibility of the speaker is essential to this audience. The speaker must be able to back up their opinions with facts/research/evidence.

- Panellists felt excluded during the debate, something which we should avoid in the future. Feelings of exclusion were due to physical/emotional and intellectual factors.

- A prolonged part of the debate took part between the speaker and two members of the audience sat at the front. This excluded other people because

a) they couldn't hear b) they felt physically removed from what was happening. Being able to hear and see other participants is essential.

- The emotional nature of the debate excluded the panellists. Partly because they were annoyed at the lack of information used by the contributors to back up their arguments; the purely emotional nature of the debate irritated them.

- For dialogue to occur all participants must feel that they can contribute, and that when they do that will be listened to by other participants. Panellists felt excluded at this event because the debate got *"hijacked"* by a small minority in the audience. They felt that a) they didn't get an opportunity to speak, b) if they had spoken they wouldn't have been listened to and c) intimidated by a vociferous minority.

  "I couldn't get a word in edgeways"

  "I knew any point I made wouldn't be taken in"

  "You always have [people with] strong feelings, but general punter needs support too"

  "But still felt that I didn't have the information to enter debate of other stronger questioners."

- Some of the panellists also felt that the issues discussed were different to those that they had received information about in the play. Therefore could not contribute because did not have adequate information about the arguments. Providing a central question to discuss would bring focus to the debate, would allow us to decide what relevant information to provide before event and during the event (through website, speakers, handouts etc) and would allow people to join in. This does not mean that the debate cannot go off into new angles.

- Several panellists talked about how members of an audience perceive each other and how this can affect whether you contribute or not (you do not want to seem stupid). This was particularly the case when talking about Science Museum. There was a feeling that they were more comfortable in the RCA environment than they would be at Science Museum. We need to break down this preconception.

  "I'm worried about the centre being attached to the Science Museum. The whole idea of the science Museum is as an academic institution. It's good to take events out of the academic arena".

OPPORTUNITIES
- There was a lot of potential to develop social capital by extending the debate.

- The panellists liked the idea of going to new venues away from the Science Museum. This was because a) some negative perceptions of the Museum associated with it being an academic Institute and b) they liked the cross over between arts and science.

- Panellists were information hungry. They wanted to learn, to find out. They were open to having their opinion formed/altered/reinforced/challenged. If we capitalise on this we could end up with very powerful events.

"Everyone has access to the emotions. Wanted knowledge to inform direction of beliefs 'something to change our minds'".

- *They liked the idea of contributing, they were interested, they wanted to be involved.*

- They enjoyed the vote. This brought interactivity to an event at which they may not have otherwise contributed. The vote was a way of getting everyone involved. Whilst some panellists felt the vote used was too simple (agree/disagree) they were interested in seeing how people surrounding them felt. They suggested using a vote throughout an event to a) provide structure/focus, b) prevent strong personalities dominating/allow shyer people to have some contribution c) to register how opinions alter throughout an event as new angles (information) are introduced. They felt that the vote forced them to think about an issue, forced them to have a standpoint.

- The vote was seen by some people as too simplistic, what they wanted to do was to explore their attitudes to the issues raised in much greater depth. People suggested working in groups during an event, everyone being asked to contribute, meeting in groups after an event to explore feelings and attitudes further.

- The panellists were open to exploring issues through different mediums and with mixed media.

- They felt that the actress allowed them to enter into the subject by adding a human angle to the issue. However they wanted it to be more 'realistic' e.g. having someone who agrees with cloning because they are waiting for a kidney transplant. They were very interested in how humans are affected by this technology/human stories. One person felt the event would have been even more powerful with the presence of a real object. He felt that the real thing would have involved him even more emotionally. There is true scope here to use objects from the collection to make issues come alive, make them human and to provide audience with concrete experience.

- They were interested in meeting the actual scientists involved in research to ask them what motivates them (again the presence of the real thing). We could provide them with a unique experience.

- The event appeared to inspire them. They liked the idea of some kind of follow up session. There suggestions for how we could help keep them involved ranged from

   a) Handouts/posters with website and references where they could get further information

   b) Having something at the Science museum connected to the event where they could find out more information

   c) Continuing the debate on the website.

   d) Having small discussion groups afterwards.

   e) Having event divided into two – they choose who they want to contribute.

Dana Centre Use group report

Culturally Active Artists and Designers

Meeting 1

13th October 2002

Alex Burch

EXECUTIVE SUMMARY

- Many of this group had negative attitudes to science as a subject associating it with negative experiences at school. Furthermore, half of them explicitly stated that they had chosen to give science up and therefore questioned why they would now be interested in it.

- This group were extremely apathetic to current affairs and issues. This apathy appeared to stem from several things. They felt it was hard to know what goes on behind the scenes and that it was hard to get at the truth.

- Science-based issues did not arise naturally as a topic of conversation and it appeared that they had a rather narrow view of what constituted science e.g. they didn't consider medicine.

- When contemporary science issues were raised, they generally had positive attitudes perceiving that developments could be used for good. However, on further discussion this was counterbalanced by the perception that it was in human nature to always (eventually) use such developments for bad.

- Issues which generated conversation had several characteristics. On many issues ethical/moral concerns provided the route into subject/area of debate e.g. cloning, transgenic animals. There was also much conversation around topical issues (George Bush/Anthrax/possible war); these issues also had a moral dimension. The abstract was rejected in favour of the concrete with personal relevance or the presence of people directly affected by an issue seen as ways of making something more 'real'.

- The panellists strongly associated the Science Museum with children. And whilst those that had recently visited had positive perceptions, they had been taken there rather than had chosen to visit. This is a substantial barrier to getting this target audience into the Museum.

- It is likely that it would be difficult to get this part of the target audience to come to an event. Their general apathy, slightly negative perceptions of the Museum and their generally negative perceptions of science are big barriers. Furthermore, they felt that for them to go to an event it would have to be something that they really cared strongly about – however, they freely admitted that there were very few topics which would evoke strong emotions.

1. INTRODUCTION

As part of the formative evaluation for the Dana Centre, the Science Museum is running a series of user groups with members of the target audience. This user group was held with young, independent adults aged 19-30, who had an arts/design background.

2. METHODOLOGY

Two gatekeepers who both had an arts/design background and were aged 19-30 were used to recruit friends of a similar background. In total the user-group consisted of 10 members. The user group was held on Sunday 13th October in a bar situated near London Bridge. The user group lasted 2 hours.

This user group discussed three main topic areas
- What issues they feel strongly about
- What makes an issue controversial
- What constitutes a good event/bad event for this audience

Aims & objectives of the research
The aims of this research are to
- Assess participants' views about science and to identify the barriers to their involvement in dialogue about scientific issues
- Identify opportunities for engaging this audience in dialogue about scientific issues

Objectives of the research are to explore
- What issues they find particularly controversial and what are the qualities of these issues which make them controversial i.e. risky, raising moral/ethical concerns, timely and personally relevant, newsworthy
- The extent to which participants do already engage in discussion about controversial issues in science and technology
- Participants attitudes to science and the barriers to engaging in a dialogue about science issues
- Participants attitudes to the Science Museum and barriers to attending an event at the Science Museum
- What would attract and engage them in a discussion about controversial issues in science and technology.

All conversations were recorded and detailed notes were made for later analysis.

General Attitudes

- This group were extremely apathetic to current affairs and issues. There were strong feelings of powerlessness, disengagement and apathy rather than straight cynicism.

- All the panellists felt that it was hard to know what goes on behind the scenes. There was a feeling that there were things going on which had influence but which they knew nothing about, weren't being told about. This in part led to feelings of powerlessness and to disengagement with issues.

  "Yes I think it's quite important, but it's hard to know the issues going on behind it".

- For several panellists there was also the feeling that it was hard to get at the truth, it was hard to find out the information that *they* wanted to know. This also led to disengagement from events.

- For some of the panellists, feelings of powerlessness also stemmed from the fact that certain issues seemed too big to tackle leading the panellists to adopt a "what can I do?" attitude.

- A lack of personal connection with an issue also led to the feeling that something was unreal, and/or led to a lack of engagement with that issue.

  "But being twenty years old and we haven't had a taste of any bombings or any kind of political unrest living in a comfy situation that we do now. It's very easy to be completely uncaring about most of the issues presented to us."

- Conversely when issues did have some personal connection for the panellists it was easier for them to engage with them e.g. most of the women commented on stories related to female health and talked about these. One panellist talked about charity work he had done for Brazilian children; he was a member of the Brazilian community.

Attitudes to Media

- About half the panellists commented that things they saw on television often seemed unreal. This was partly due to the nature of the medium.

  "That's a tool for entertainment television, so when you are fed real images you spend so much of your time thinking, 'oh yeah, they're just actors' or whatever you know, it just doesn't really register in your brain. It's hard to make the distinction really."

- Several panellists felt that the information they had access to was biased. This led to distrust and ultimately disengagement.

What Makes An Issue Controversial?

- The panellists were shown a series of adverts from magazines and asked to choose images which they found controversial or which represented something controversial to them. This group were very media (image) savvy. They tended not to be offended by media images because they identified and understood the thinking behind them.

- The image which *was* controversial to them was the Barnados advert regarding child prostitution. This was seen to be thought-provoking and

shocking in a positive way. The effectiveness of this advert appeared to be due to several things. Firstly, the image was very powerful and arresting, secondly, panellists felt that it was presenting the truth and thirdly the placement of this advert in a glossy magazine made it powerful since, unlike what surrounded it, it wasn't commercial.

- Secondly, the commercialisation of childhood caused much discussion and anger. Panellists viewed childhood with nostalgia, as a golden time which should not be commercialised and which should be free of (adult?) pressures.

- The moral/ethical question of 'Where do you draw the line' made certain science issues controversial.

Attitudes to Science
- Science based issues did not naturally arise as topic of conversation for this group. It was only after they were prompted did they begin to consider science issues. Interestingly, three of the user group members said that they didn't really think of medicine under the heading of science.

    "I don't even think of medicine as science"

- Science-based issues which were mentioned by the panellists included:
    - Cloning
    - Transgenic animals
    - Euthanasia (2 members of the group had seen the euthanasia machine   at the Science Museum)
    - HIV/AIDS
    - Genetic engineering – curing of illness/prevention of illness/extending life expectancy

- All the members of the group expressed interest in and had positive attitudes to developments in modern science (see above topics).

- The above issues all involved moral/ethical elements which were discussed by the panel members. Most of these concerns were about "Where do you draw the line" which generated quite a lot of discussion. Nearly all of the participants expressed feelings of inevitability that science would ultimately be used for what was perceived as bad reasons as well as the intended good. This resulted in a certain cynicism towards scientific advancements.

    "If you could say okay we're going to do this, but we're just going to stop the medical issues for health and stuff then everything would be fine, but it's not going to happen."

- About half of the group explicitly said that they had chosen to give up science (whilst at school). This in turn meant that they simply felt no interest in science (as a subject) and felt that there was a total lack of relevance to what they do now.

- For most members of the group, the word 'science' conjured school related images of bunsen burners, chemistry lessons, wire gauze. For several people the association of science with school was very negative:

    "Because science is probably one of the least things that I'd ever want to do. I just have bad memories of science at school."

- One panellist was quite excited by the 'gadgety'/technological aspects of science and talked about these areas.

Attitudes to the Science Museum
- Most panellists associated the Science Museum with children and had positive, nostalgic memories of visiting the Museum as a child. Several of the user group members felt that the museum was aimed at children.

- Whilst several panellists (who had not visited recently) felt that the Science Museum would be boring, those panellists who had visited recently talked positively about the Museum and were surprised by the visualness/design aspects of the Museum (important for this group). It must be noted though, that those people who had recently visited were conscript visitors rather than volunteers. It had taken someone else to take them to the Museum, they had not chosen to go to the Museum. This potentially represents a large barrier.

  "Before that I would never have dreamed of going to the Science Museum…" (consript visitor)

- Whilst several panellists stated that they would be excited by the prospect of going to an event at Science Museum would be like, several others said they thought it would be boring. About half the group felt that a Science Museum event would be above their heads.

  "I would probably think, would I understand anything that was going on within the Science Museum?"

- Half the panellists visualised the audience at an event as being different from them: *"School children being made to go";* families; *"a conservative bunch of people;* people with a background in science*".*

- Several panellists visualised the speakers at a Science Museum event as "a mad scientist".

Good Event/Bad Event
- The speaker needed to be credible i.e. believable and honest. Panellists wanted speakers who would give them an unbiased assessment.

  "You want somebody who is going to say this is this side, this is that side to more or less talk about it"

  Furthermore, several panellists felt that events should be used to challenge the 'establishment' rather than acting as an agent for the 'establishment'.

- For some of the panellists, it didn't matter whether the speakers were the actual scientists involved – of greater importance was that speakers were good communicators. Three of the panellists said that the speaker was passionate about the subject was important and would help to help to engage them (the panellists) in the issue. Examples of types of speakers they wanted to hear from included Patrick Moore, public speakers, inspiring school teachers.

- For all the panellists it was extremely important that the science presented was not abstract but was made concrete. All the panellists felt that having people there that could be/have been affected by the science would make the science more real – this could be an effective route into science issues.

"So when you're talking about DNA to me it's not something that I understand or am interested in. To make it something that I would come away having enjoyed it or got something from it would be if there were people talking about their experience of that subject because then I can put myself in their position."

- Making the science personally relevant to the panellists was another way of making the issue concrete and more engaging.

- The panellists identified themselves as non-scientists. They felt that other attendees at an event would be scientists and therefore would know more and this represented an emotional barrier. Furthermore, the fact that they had given up science also presented an emotional barrier – it was something that they gave up because they weren't interested in it and therefore why would they go to an event about it? It was felt that it needed to be indicated that the events were NOT aimed at scientists with someone suggesting titling along the lines of "Beginners Guide To…". This they felt would reduce the emotional barrier.

- Associated with the above was the fear that the event would use terminology which they wouldn't be able to understand – this would represent an intellectual barrier.

    "In science you have all these terms, almost like a dictionary of terms and that really scares me because I don't know anything about them and it's just blah, blah, blah".

- We must be aware that terminology which we think is understood and in everyday use may not be understood by the audience. One panellist did not know what was meant by the Human Genome and one did not know what MMR meant.

- All the panellists commented that it would be difficult to get them to an event. The event would have to be one of a few subjects that they feel really strongly about. Even if they were interested in a subject does not mean that they would be motivated to attend an event about that subject. This may mean that we do want to consider niche marketing much more than general marketing.

    "If it was in a newspaper I'd read about it. But to actually go somewhere…?"

Dana Centre User Group Report

Culturally Active Artists and Designers

Meeting 2

Alex Burch

February 2003

2nd Focus Group: Culturally Active Artists and Designers.

Executive Summary

- There were clear physical barriers which prevented participants enjoying, engaging and joining in with the event. Participants had difficulty hearing both the performance and the discussion. Participants also had difficulty seeing the performance.

- There were strong emotional barriers at this event. These prevented the invited panellists enjoying and engaging with the event. Panellists felt that parts of the events were too childish/amateurish this was very off-putting. During the discussion most participants felt that the speakers weren't interested in their views, felt if they had expressed them they would have been judged and felt that it was an exclusive audience. This prevented participants taking part in any kind of dialogue.

- The event was largely viewed as uninteresting and unchallenging. Panellists felt it lacked focus, depth and for some was too abstract.

- Although this event did not work particularly well for this target audience, the exploration of issues through events which used other formats than a lecture was seen as a positive thing. This should be explored more at future events.

- This event did have a positive impact on the panellists' view of the Science Museum. Previously panellists strongly associated the Museum with families and scientists, however having been to an event they felt it was aimed at a much broader audience, one which included themselves.

Methodology: This was the second focus group held with culturally active, independent adults with a background in art or design. Seven panellists attended the Skin Deep event held at the Science Museum (October 2002) and were subsequently interviewed. This report concentrates on the strengths, weaknesses, opportunities and threats that were identified through interviews with the panellists. These have then largely been coded as physical, emotional/social and intellectual according to the Maslow Pyramid for events.

Event Format: The event was divided into two halves. The first half was a puppet show exploring based on Victorian Freak Shows. The second half was a panel discussion with two of the puppeteers, an academic expert on Freak Shows and a performance artists.

Weaknesses

Physical
- The performers and speakers weren't mic-ed and therefore it was difficult to hear. Indeed, one of the panellists was unable to hear any of the event and said that she would have left if she hadn't been invited.

- The audience were seated on chairs in rows, the performers and speakers were placed on the same level as the audience. This proved to be a significant barrier to seeing the puppet performance.

Emotional
- For half of the panellists the event was too formal in feel. This seemed to be due largely to the seating arrangement. The arrangement of speakers sitting facing the audience who were placed in rows added to the formality of the event and helped to contribute to a feeling of them and us (further compounded by other issues). Panellists commented on it feeling like a lecture.

- Half of the panellists felt that the circus performance was pitched wrong. There was a feeling that it was childish and amateurish. This was not appealing to this audience.

  "It was very teachery with the chocolates at the beginning – felt like a school kid, like a school drama which is very scary"

- None of the invited focus group panellists contributed during the audience discussion. Nearly all of them identified clear emotional barriers to doing so. Most of the panellists felt that the invited speakers had their own agenda and weren't interested in what others had to say.

  "In the question and answer there were some things I wanted to say but it wasn't allowed…she only answered questions she liked"

- Most of the panellists also felt that this was an event for "those in the know". They felt that the event was only for the well informed.

  "Felt a bit of an uninvited guest, felt scared that someone might say "so what do you think sir?""

- Several panellists also expressed fears that they might be judged on what they say.

  "felt there was a pressure to come up with something good/ a novel question".

- However, one panellist DID feel comfortable and relaxed during the discussion and did not identify any emotional barriers during this part of the event.

- Some panellists felt that they didn't understand the basic structure of the event. This affected their enjoyment of it. They did not realise that it was going to be a puppet show followed by a discussion. Furthermore these panellists found it difficult to comprehend how the two halves of the event fitted together. The panellists specifically requested that they were given a clear idea of the format and the main points under discussion.

"An introduction would have been nice. A beginning, middle and end. I didn't get a send of what was happening, maybe because there was a bit more polishing to do to the whole thing to bring the two parts together"

Intellectual

- For most of the panellists, the event was largely uninteresting, unchallenging and uninformative, although potentially panellists felt that this could have been very interesting and challenging topic area.

"I felt they weren't giving you anything you didn't already know, nothing you wouldn't have already thought of".

- Several panellists felt that there was a lack of focus in the discussion. It was unclear what the central issues under discussion were, instead they felt that several large topics were raised but none of these were ever explored or touched on more than superficially. This resulted in the feeling that not much had been said by the end of the event.

- It was unclear when they were watching the puppet show what they key issues were going to be in the discussion. Therefore the puppet show failed to be an effective stimulus for the subsequent discussion.

- Two of the panellists felt that the event was too abstract and intellectualised an emotional issue. They wanted to see the real thing, they wanted to hear accounts from real people.

- For one of the panellists the event was patronising. This panellist felt that it wasn't controversial or challenging and said that it was patronising for us or the speakers to assume that 'ordinary' members of the panel had not considered such issues before.

""No depth to what they were saying. Pretending you couldn't know those things – patronising".

Strengths

Emotional
- Several panellists said that they liked the space. It made them feel that they were somewhere special, somewhere they wouldn't normally get to go. They liked the set-up of the circus tent and this added to their feeling that they were part of something. The set up of the tent within a small space also helped the event to feel intimate.

Intellectual
- The majority of the panellists enjoyed hearing from the puppeteers. They were interested in what they had to say and wanted to know more about how they came up with the story and their ideas/research behind it.

- Several people enjoyed hearing about the historical aspect to freakshows.

Threats
- None of the panellists would have chosen to have visit this event had they not been invited as part of the focus group. It would take a lot to get this group to come to an event. We would need to work on both their awareness that the events are being put on and on producing something that they really want to go to.

"Just the sense of coming in and seeing event laid out, its off the beaten track, you feel only privileged few know. It needs to be made more public"

Opportunities
- For half the panellists, attending this event altered their opinions of the Science Museum; they no longer viewed it as a place just for children and families or for scientists.

"it wasn't just for kids or 'techy' science professors. It was more for the popular … interested, educated people".

- Although most of the panellists found the puppet show amateurish and childish they were positive about the idea of using a puppet show to explore scientific media. They were pleased that the event was not just an old fashioned lecture.

"I would never have expected a puppet show. This is a positive change in my opinion.. Nice that there was no preaching. Nice it was different".

- The panellists were interested in hearing from real people. They wanted to hear more from the puppeteers about what inspired them and they also wanted to hear from people directly involved in the issue. They wanted to meet and hear from people directly involved in freak shows.

- Whilst this event did not particularly challenge the panellists, they were very open to having their views and attitudes challenged at events.

Dana Centre User Group

African-Caribbean User Group

7th July 2002

Alex Burch
September 2002

EXECUTIVE SUMMARY

- Participants' reactions to science *per se* were positive. However, reactions to the formal practise of science were negative and related to the panellists perceptions of the institutions and people conducting/practising science. Panellists felt that scientific research was often biased by underlying agendas e.g. the aim of big companies being to make money. Panellists tended to distrust the scientists themselves either because of their association with institutions, which implied that they were not objective, or because they felt that scientists were irresponsible.

- Underlying and influencing the negative reactions to the formal frameworks of science are perceptions of endemic racism. Three strands to this racism emerged:
  - ➢ An exclusion/lack of respect for non-Western Knowledge
  - ➢ A feeling that the West uses African/African heritage peoples: To test new research/medicine on; to 'offload' old/out of date medicine on.
  - ➢ A feeling that the West attaches blame to African/African heritage peoples e.g. over issues such as AIDS.

- The panellists appeared to distrust a lot of the information about science they had access to. This seemed to be due to two causes.

- A distrust of where the information was coming from with sources such as big business being seen as biased.

- Confusion when conflicting pieces of 'evidence' about an issue were seen, with panellists questioning how this was possible and asking what they were to believe. This reflects the widely held belief that there is 'one scientific truth out there'.

- At an event, the panellists wanted to hear from a range of contributors with different experiences of the issue. This included different viewpoints, different cultural experiences of an issue i.e. not just from the Black Community, as well as professional vs. personal experience of an issue.

- It was felt to be important that an event was multicultural in terms of both the audience and the speakers. This seemed to be related to the learning process, getting people from different backgrounds to talk together and respect to grow out of this.

- For this group, controversial issues were those that contain elements of risk (health), moral/ethical questions and/or personal/social relevance. Again perceptions of racism underlay many of the controversial issues mentioned, with panellists talking about racism being endemic to big institutions/companies and to particular societies/sections of society, rather than racism directed against an individual.

1. INTRODUCTION
As part of the formative evaluation for the Dana Centre, the Science Museum is running a series of user groups with members of the target audience. This user group was held with members of the African-Caribbean community.

2. METHODOLOGY
A gatekeeper from the African-Caribbean community was used to recruit members for this group. Group members had already taken part in a Science Museum consultation about responses of the Black Community to the Museum.

The group consisted of six people (five females, one male) four of whom were parents. Their ages ranged from early 20's to mid 40's. The user group was held on Sunday 7th July 2002 in the Science Museum Fellows room and lasted from 3–4.30 pm.

This user group discussed three main topic areas
- What makes an issue controversial
- What would get them engaged in an event
- What constitutes a good event/bad event for this audience

Aims & objectives of the research
The aims of this research are to
- Assess participants' views about science and to identify the barriers to their involvement in dialogue about scientific issues
- Identify opportunities for engaging this audience in dialogue about scientific issues

Objectives of the research are to explore
- Participants' hopes and fears about contemporary science and technology
- What issues they find particularly controversial – i.e. risky, raising moral/ethical concerns, timely and personally relevant, newsworthy
- Participants' feelings about engaging in discussion about controversial issues in science and technology
- The extent to which participants do already engage in discussion about controversial issues in science and technology
- Their expectations of a Naked Science event – hopes and fears
- What would attract and engage them in a discussion about discussion controversial issues in science and technology

3. RESULTS
Reaction to Science

- Panellists' reactions to science *per se* were positive. They talked about it as something their children were interested in and they actively looked for science resources (role models, activities, books) to keep their children engaged and interested.

- However, their reactions to the actual practice, people and framework (institutions) of science were negative.

"Science in itself is good, but what I am saying is who's behind it and is it the money…?"

- These negative attitudes towards these formal working practices of science fell into three broad categories

1. Perceptions of Big Business
All the panellists mentioned negative connotations to commercial/big business aspects of science.

There was a feeling amongst all the panellists that the main motivation of big Companies is to make money and that this is done at the expense of moral/ethical concerns.

"There are people who could cure AIDS but the don't want them to be there because it won't make drug companies any money…"

"It's as though the drug companies want you to buy more drugs because they want to sell more…"

The panellists felt that the need to make money drove the direction of research, prevented investment in non-money making cures and made people take things which didn't need to take to make a vicious circle.

"…they [companies] give you food which makes you sick so that you will take the drugs, so it's all kind of linked. A vicious circle, people too blind to see exactly what's going on in front of us"

Several panellists mentioned that the affect of such 'policies' were felt by the poor.

2. Perceptions of Scientists
Panellists also appeared to distrust scientists themselves. Distrust seemed to arise either because people felt that scientists were irresponsible or partly because of their association with institutions, which for the panellists implied that they did not have an unbiased agenda.

"…I think a lot of the time scientists are messing around with certain things that they shouldn't be messing around with, something's gone wrong and they can pass the buck…"

"…because they [companies] do have their own scientists their word is not bond"

3. Perceptions of Western Institutions
There was a feeling that Western professional, academic institutions and big companies focussed solely on formal, Western knowledge. Panellists

felt that these institutions weren't willing to accept knowledge from other parts of the world and this led to a distrust of these institutions because things that they knew/felt to be right weren't recognised.

"Science is not necessarily because of the big university or whatever it should be knowledge"

Science and Racism

The above negative attitudes to the formal structures of science appeared to be associated with the panel's perception of racism against African or African heritage people. Three strands to this racism emerged. In the following the term West is used to denote not only academic and professional organisations but also a wider cultural base.

1. The exclusion of non-Western knowledge was a form of racism. The panellists felt that the West does not respect African/African heritage based knowledge. This was both a perceived lack of respect for black scientists and their research as well as a perceived lack of respect for traditional preventatives/cures. The Science and Culture panel also raised this point and expressed concern that traditional, scientific histories only represent an elite West6ern viewpoint, leaving the role played by other groups invisible.

2. The West uses African/African heritage peoples. Several panellists talked about the West going to Africa and experimenting or selling out of date drugs there. Strongly associated with this were ethical concerns i.e. the people affected are poor and powerless and therefore have no choice.

   "You say it [AIDS] was caused in Africa but I think a lot of the time scientists are messing around with certain things that they shouldn't be messing around with."

3. The West blames African/African heritage groups. Several panellists talked about this in conjunction with a debate about AIDS.

   "I find it very offensive to think that the whole world is believing that it stems from Africa, which essentially a black third world country and there's never been anything to disprove that".

Attitudes to information

- The panellists expressed distrust of the information they had access to about science. This distrust stemmed from two things.

   1) Firstly, panellists seemed to question where information that they had access to actually came from. This may be partly to do with a lack of sourcing especially when their general negative perceptions of science coming out of big institutions is taken into account.

      "Something in the paper last week – if you take more anadin it will stop you getting cancer. Where does the information come from?"

   2) Secondly, several panellists mentioned the conflict between different information that they had read. This appeared to contribute to a distrust of scientific research making them question how people could make the right informed decision.

> "…so people don't know what to do, some of them don't do anything, so that impacts on how they develop or their lives will change"

- On certain issues, such as AIDS, the panellists knew lots of different information but couldn't see how these individual pieces of information fitted together. This caused them concern and again led them to question the verity of the scientific research from which these findings had been taken.

> *"…does it mean that homosexual people went over and came back and spread it or what?"*

Good Event/Bad Event

- Several panellists mentioned that a bad event would be one where someone stood up and gave a lecture that everyone believed and no-one questioned. It seemed to be important to this group to be able to question and explore issues raised.

- Panellists wanted a certain degree of informality – (not just a formal lecture where you sit and listen). They did not want to be forced to do something.

> *"The worst way would be, 'We've got to have a discussion'"*

- It was important to the panellists that other participants wanted to know their opinion.

- The choice of speaker(s) was important. The panel all agreed that a dull or boring speaker would make for a bad event. It was also important to them that the speaker wasn't pompous and was willing to listen to other's experience.

- The speaker had to be credible i.e. have real/practical experience of the issue talking on, they knowledge was not solely gained from textbooks.

- In addition the panellists were eager to hear from people with unique/real experience of an issue. They thought that this would be interesting and would also make the issue more concrete.

> *"…but also the experience that people have had, I think that's very important because people can then relate that to it"*

> *"I think that would attract people more wouldn't it, knowing about someone's experience"*

- The panellists also placed importance on having a range of contributors at an event who had different experience/knowledge or attitudes to the issue e.g.

> *"I would like to have, not just one speaker, different scientists from around the world, who have different experiences of HIV, I would also have people with AIDS there…"*

- Panellists also placed importance on the event being multicultural. This seemed to be related to learning process, getting people from different backgrounds to talk together and respect to grow out of this.

Engagement/non-engagement with issues
- Several panellists mentioned issues in which they had actively got involved. These appeared to be issues which were personally relevant to them (Student Loans March, Mother's working March).

- Several barriers to active participation were mentioned. These were:
  a) no-one is going to listen to what you say
  b) you think that someone else will do something (instead of you doing something)
  c) you feel you are the only one who feels a certain way.

This may indicate that people need to know what they can do.

What made something controversial*?
* The definition of controversy used here is drawn from D. Scopes' model of science-based controversy; a dispute around a science issue which includes several factors with a heavy ethical or political overlay.

- The issues which were controversial for this group were those which involved risk (health), moral/ethical concerns and relevance (personal or social).

- All the panellists expressed moral/ethical concerns over the activities of big multinational companies, especially drugs companies. Panellists felt that making money was the prime motivation and pursued at a cost to moral/ethical considerations. This creates distrust.

  "I knew a doctor who did a lot of research in the Royal Free Hospital and they presented this to the drug companies and they said well we can't make money out of this because it's poor people get cholera so they wouldn't make any money so therefore they wouldn't manufacture the drug".

- Moral/ethical concerns about the multinationals activities often encompassed perceptions of health risks i.e. that their activities were detrimental to people's health.

  "…the multinationals making people want to eat hamburgers or whatever and that's not food for certain people and cultures because it makes them sick and you get cancer and other things that were alien to that part of the world…"

- Panellists also talked about issues which incorporated elements of social injustice. This feeling of social injustice was strongly linked to powerlessness. Powerlessness was not so much do with themselves but was about groups of people e.g. the defencelessness of other people in other countries.

  "…something will come up in the poorer countries , the ones that are not able to stand up and defend themselves…"

- Many of the above moral/ethical/risk/powerlessness concerns were correlated to perceptions of racism. Racism was not mentioned in the context of individuals but rather in terms of institutionalised racism; where racism was endemic to big institutions/companies and to particular societies/sections of society. In many ways this racism was not seen to be overt but rather more subtle and integral to institutions/structures and societies. For the panellists this appeared to act as a form of cultural imperialism where white, Western views dominated.

- Several issues raised very fundamental moral/ethical concerns of playing with nature, playing God, or dealt with dilemmas such as what areas of research money should be invested in.

  "I think we're trying to play God and trying to create something that isn't going to be there, they think they're playing with a Cindy doll or a Barbie doll".

  "When you think now of the weapons that they've got, they say they haven't got enough money to put into medicines, but think of the amount of money that they're putting in, you only need one bomb to destroy the whole world and think how much more they've got".

- Many of the panellists talked about the potential negative effect of certain things on the society around them. E.g. crack cocaine, designer babies and the pressure on perfection, designer babies and the consequences of policies such as those implemented in China.

- In addition a strong element to topics which stimulated debate was to do with the information that the panellists knew about the topic. Lots of disparate pieces of information which seemingly had no link caused the panellists to ask lots of questions. This could be something to exploit when tackling issues with this characteristic.

  "If it started in monkeys in Africa, they should all be dead by now shouldn't they really, think about it."

  "Obviously in affluent countries in the homosexual community and now heterosexual, so obviously if you're sat in Africa does it mean that homosexual people went over there and came back and spread it or what?"

Specific issues that generated debate
The panel discussion threw up specific issues that caused a great deal of discussion and debate.
- AIDS. Around the subject of HIV/AIDS the panellists felt there were attached many elements of racism. Areas of debate included
  1) Did AIDS really start in Africa – where is the evidence for and against.
  2) Did AIDS really start in monkeys
  3) If it did start in Africa how did it spread to the rest of the world?
  4) How did AIDS end up in many different and apparently unrelated communities?
  5) Cures found by black scientists/ 'traditional' cures used in Africa are not accepted in the West. Why?
  6) Distrust of scientists – did AIDS come from scientists experimenting in Africa

- Intellectual Patenting – Afro-Caribbean based knowledge is used by West with no recognition of that contribution. In addition it is only when medicine is Westernised that it is recognised (and accepted)

- Traditional medicine vs Western medicine.

- Crack – this was talked about and compared to use of marijuana. There seemed to be a high degree of fear around crack cocaine. People mentioned that it was antisocial, highly addictive, crossed all boundaries. This fear appeared to be related to a) the fact it might affect them or someone that they knew and b) affect social fabric.

- Designer babies. This topic generated strong reactions to the ethics, raised questions as to whether this is a modern day form of eugenics and what Hitler tried to attain. Furthermore, some questions about body image were raised in discussion about this issue.

- Multinational companies. In particular their money vs ethical based agenda.

- The science behind slavery. The fact that someone designed the apparatus to enslave people was thought-provoking.

Dana Centre User Group Report

Imperial College Students

Meeting 1

Brookie Fraser Jenkins

March 2003

The Imperial College focus group consisted of local science students. This first meeting was conducted over 1 ½ hours and took place inside the Science Museum.

1. <u>**Executive Summary**</u>

- The Science Museum holds strong associations with childhood for this group. The group talked about personal nostalgic memories of the Museum, which were brought forward to the present day creating the belief that the Museum has a fundamental role to play in children's education.

- Whilst members of the focus group saw these childhood associations in a positive light, they represent a threat for the Dana Centre which is trying foster an adult audience. Despite studying in the area and having a science background, the group were not aware of what was currently available in the Science Museum.

- When asked to talk about issues they care about this group focussed primarily on political issues and current affairs. They were interested in issues that had National or International impact, and issues that affected them personally. Although all members of the group are scientists, science based issues were not raised until the group were prompted to do so.

- This group were sceptical about corporate scientific research and expressed a sense of powerlessness in the face of future scientific developments.

- When discussing what this group considered to be controversial it was clear that group members were not easily shocked. The group felt that frequent exposure to so-called controversial material had prevented them from seeing it in this light. For a topic to remain controversial, it needed to have personal relevance for this group.

- When asked how they would like to continue a discussion after an event had finished the group spoke about using the Internet. However, their suggestion was spoken with indifference. It was far from clear that group members would choose to use this facility, rather, that Internet provision was expected of the event organisers.

- A good event for this group would have a range of visual and audio material, and would provide basic information as well as giving the occasion to take this knowledge to a more profound level.

2. Introduction

As part of the Dana Centre evaluation, user groups have been recruited with members of the target audience. The Imperial College group was the 6th focus group to take place.

The main topic areas covered by the user group were:
- What issues do the group find controversial?
- What are their attitudes to the Science Museum?
- What would make a good event?

3. Methodology

This focus group consisted of 7 science students from Imperial College. As such, they are representative of a strand of the target audience defined as people who work in the area and have a scientific background. The group were recruited from the Imperial College choir and all were independent adults in the 18 – 40 age range, in accordance with the Dana Centre target audience. The user group was held inside the Science Museum during the evening; from 6.30 – 8pm.

4. Results

4.1   Attitudes and perceptions of the Science Museum

- The initial associations this group made with the Science Museum were bound up with childhood. This refers both to their impressions of the Museum as it is now, and nostalgic memories of their own childhood. Although for this group, their associations were presented in a positive light, the same associations present a threat to us by being overtly linked to children and not adults, as is our target audience. They were not able to readily make adult associations. When asked what comes to mind when thinking of the Science Museum, responses included:

    …Lots of school kids – there are always crowds out there

    …The good old days.

- Several people spoke about specific exhibits (Foucault's pendulum, Telecommunications gallery, and exhibits in Launch Pad) and were glad that these had not changed over the years. People had developed personal stories that were attached to these exhibits.

- For this focus group it was important that children are encouraged to think positively about science. They believed that the Science Museum has a significant role to play in fostering this interest. One person believed that their adult occupation as a post-graduate Scientist had been directly affected by a childhood involvement with the Science Museum. The group made an intrinsic link between the Science Museum and education, which again draws attention to the linking of the Science Museum and children.

- Another important perception of the Science Museum for this group linked it to a sense of fun. Several people spoke about interaction and pressing buttons when asked what they thought of the Museum.

4.2   Barriers to the Science Museum

- Despite the group's overwhelmingly positive reaction to the Science Museum, it was noticeable that panellists were not aware of current exhibitions and events. There was nothing specific that members of the group wanted to go and see.

  I don't really know what's going on in the Science Museum.

- Although panellists believed the Museum to be accessible, a contradiction to this was highlighted when one person said that they didn't go into the Museum after lectures.

A lot of the time I would have wanted to go in… but really there's no point in going in at 5pm…

- Of this group of local science students, only 3 / 7 indicated that they had been into the Science Museum in their adulthood. The rest of the group had not visited since childhood.

4.3   Issues

- The group were asked to talk about what issues they felt strongly about. At this stage no prompts were given. The issues they raised were political and extremely topical, relating to current affairs of the previous months. They did not raise any science related issues until asked to move away from politics.

- Issues that held interest for the group were those that they considered to be 'significant' on a National or global scale, or issues that would affect them personally. Initially these included the Middle East crisis and terrorism. Latterly the group talked about cloning and genetic research, but this only emerged after the group were prompted to move away from a political angle.

- Issues the group considered to be uninteresting fell into two categories: These were either issues that had been in the media for too long and therefore become boring, or they were issues that did not have any personal relevance to the panellists. For example, a headline about Mothers was not interesting to this group of independent adults.

- At times, this group expressed a sense of powerlessness. Responses to this emotion however, created an interesting division in their responses to the issues they talked about. When the powerlessness was coupled with a personal fear, such as when talking about the current Middle East crisis, the group became engaged with the issue.

(About George W Bush)…He is the most dangerous thing out there. He's an idiot who can't string two words together….

The group spent a significant amount of time talking about this one issue, and all had strong opinions on it. The language used was emotional and eloquent. On the other hand, when the group were asked about issues that leave them equally powerless, but without fear, this enthusiasm was lost.

'Men suffer PMT too' – I don't care….It's like a gossip column in a tabloid. It's not ground-breaking.

- When encouraged, the group spoke about several scientific issues which they found to be disturbing and awkward. These concerned research performed on humans or with human body parts. The group found that these issues were more provocative because of their familiar human element. One person thought that this had put them off and reduced their interest in the issue. Paradoxically, the group also believed that personalisation can make an issue more appealing. Again, this relates to an element of personal fear that can make an issue interesting.

4.4 Attitudes to science

- The panellists were shown a number of science related headlines taken from a selection of newspapers and magazines. They were then asked to pick out those issues that they did NOT think were interesting. As science students the group were interested in most science subjects and found it difficult to find issues they considered boring.

- One person said that they were not interested in Biology-related issues, however all the issues raised subsequently were in-fact based in Biology.

- One person felt that they would not wish to spend extra-curricular hours involved in the same subject they study during the working week.

- There was a sense of powerlessness in relation to future scientific developments. The group indicated that although some aspects of contemporary scientific research were morally challenging, they believe that the research will go ahead regardless of public opinion.

- The group were sceptical about corporate scientific research. They linked this research with profit-making and spoke about the current emphasis on biology as a way of making money.

I think the whole thing has been just totally blurred by all this cashing in….

Biology is the way of the future. It's where the money is.

4.5 Controversy

- As with the 3rd focus group, panellists were shown a number of adverts from magazines and asked to pick out those that they thought were controversial. The group were not easily shocked by this material. They believed that as the public are exposed to so much that is deemed 'controversial' they had built up an 'immunity' and were no longer shocked.

You're being bombarded by these pictures for so long that we're not phased by seeing them.

- For an image to be shocking it had to become personal to the viewer. This may be because of the subject of the image, or due to its context.

- In particular, the group pointed out a Barnado's advert as being controversial. Panellists felt that this image was shocking in its sense of reality. They linked this advert to the former public safety adverts about using fireworks and drink-driving. This association emphasises where the power of the Barnado's advert lies:

Maybe it reminds you that something could happen to you.

The impact of the advert seems to lie in the viewer's ability to empathise with its protagonist, and therefore imagine oneself to be in their position.

4.6 Good / Bad event

- Several people stated the following as contributing to a good event:
    - Interactivity
    - Visual accoutrements
    - Audience involvement (question and audience)
    - Immersive experience
    - Celebrity presence

- It was felt that an event should be neither simple not too complicated. A 'bottom up' approach was suggested where simple information is provided but extra insight is also available.

- When asked how they would choose to pursue their interest after attending an event, the group said that information could be provided on the Internet. This was suggested with indifference however, receiving neither a positive or negative reaction from the group.

- The group suggested celebrities such as Johnny Ball to be a speaker. This suggestion was met with a very positive reaction by the majority of the group, and once again there was a sense of nostalgia as people remembered Johnny Ball from their childhood.

- The group felt that it was important to have a speaker who would be able to explain and make the audience understand. This appeared to be more important for the group than seeing the leading figure on the subject, who may be a less proficient speaker.

There is no point in having someone who spouts scientific garbage.

One person suggested Lord Winston and Susan Greenfield as examples of speakers who fall between the categories of being a celebrity and being able to communicate.

- Topics that the group would like to see covered by the Dana Centre focused on presentations about Forensic Science. The panellists agreed that scientific instruments in themselves are 'dull' but that context can change this. For a topic to be appealing for this group, it appears that it must be at once realistic and exciting.

I find it interesting how they can find out things from a crime scene…

Dana Centre User Group Report

Imperial College Students

Meeting 2

Brookie Fraser Jenkins
June 2003

The second meeting of the Imperial College group occurred over 2 occasions. The group met initially to attend an event, and again to discuss their reactions to what they had seen.

1. <u>Executive Summary</u>

This group were heavily engaged in dialogue throughout the event they attended. It was felt that the opportunities afforded by small group discussions allowed group members to engage with speakers and other audience members with equal parity. Reactions to this part of the event were extremely positive.

The small group discussion also provided this focus group with strong indicators of learning. These covered cognitive, affective, social, and personal learning. For example, focus group members learnt new information, were made more aware of points of view that differ to their own, and even changed their own opinions as a result of this event.

There was a criticism from some group members that the event had not been long enough. However, the same people were surprised when they were told how long the event actually was. In this case, the criticism can be seen in a positive light, as it implies that group members left the building inspired and happy to continue the debate. In support of this, it should be noted that some group members did indeed continue talking about the issues raised directly following the event.

2. Introduction

As part of Dana Centre Evaluation, focus groups have been recruited with the target audience. This meeting forms the second session with this focus group and took place after the group had seen a Naked Science event. A report on the first meeting is also available.

The main topic areas covered in this session were:
- Likes and dislikes about the event the group had seen
- Expectations about the event
- Perceptions of the Science Museum

3. Methodology

3.1 Session 1 - Focus Group

7 local science students were recruited for this focus group. 6 of these people were then recruited a second time and invited to attend a Naked Science Event titled, "*Animals or human experimentation: Which do we value more?*"

The event was observed and detailed notes taken. Following the event, the focus group was divided in 2 and invited back to the Museum to talk about what they had seen. These sessions lasted for an hour each.

3.2 Session 2 - Event format

Animals or human experimentation: Which do we value more? was delivered using an experimental event format. 4 speakers were invited to outline their position in relation to the title of the event, and the audience were then divided up into 4 groups of approximately 12 people each. The speakers spoke to each group in turn for 15 minutes each. The final part of the event brought the audience back together as a whole and was completed with a voting question from the audience.

Three focus group members each were present in 2 of the 4 groups at this event.

4. Results
4.1 Strengths - Dialogue
- The group spoke very positively about the opportunities provided by small group discussion. It was felt that this allowed for greater communication than would be provided by a traditional panel debate.

  It was easier to approach in small groups… when the speaker came around it was a discussion, not a Q and A. They were part of the discussion.
  (Focus Group participant)

- The group enjoyed listening to other people's opinions during the debate. There was a positive reaction to the range of opinion in the groups that were provided by other audience members.

- Focus group members felt comfortable in the small groups and found it easy to ask questions or state opinions. One person said that they had been 'mildly intimidated' initially, but that this feeling disappeared as the debate moved on and more people joined in.

- Observation notes taken at the time show that all group members appeared to achieve parity with the speakers. This was echoed by the focus group who found it easy and useful to discuss with the speakers.

Its nice to chat to them (speakers) on that level. They weren't all high and mighty.
(Focus group participant)

4.2 Strengths - Learning

- There was a concern expressed at the first meeting of this group that the event might be pitched at an inappropriate level for this audience of science students. However, following the event the group stated that this was not the case. Basic information was provided and the discussion moved forward enough for some of the group to find it challenging.

    It wasn't glossed over… level you could understand but it didn't get bogged down in too many acronyms.
(Focus group participant)

- There was strong evidence of several different types of learning for this focus group; these included cognitive learning, affective, social and personal learning.

- Cognitive learning occurred when new information was provided by the speakers and other audience members.

    We were given a lot of information yesterday…
(Focus group participant)

- Affective learning was displayed by an increase in awareness of other people's point's of view, challenging the beliefs of participants and by sparking an interest in a new subject matter for one group member:

    We all had different views – it was a good opportunity to open different points of view and discuss it.
(Focus group participant)

    It was challenging because it put new ideas to my point of view. Made me think, and challenge my point of view.
(Focus group participant)

- Social learning was displayed by the small group discussions. Participants spoke to members of the audience they did not know previously, and communicated by people they were initially intimidated by.

- The one focus group participant who was directly asked, said that she would feel more confident is asked to discuss these issues again. This gives evidence of personal learning. Another group member said that he was not interested in the topic before the event, but that he had found the event itself to be interesting and enjoyable.

- At least one group member voted during the event that their opinions had been changed. Other group members said that their opinions had been challenged.

It increased my awareness and knowledge of the issues and broadened my awareness of other people's opinions

<div align="right">(Focus group participant)</div>

4.3 Weaknesses - Barriers to the event

- Several members of the focus group found it difficult to adequately express their opinions through the vote at the end of the event. They did not feel that any of the categories expressed exactly what they felt. It was suggested that there could be more options available, including an abstain option.

- Several people felt that they wanted longer to discuss the issues concerned, in particular when the audience reformed as a large group towards the end of the event. There was a concern that the event felt 'incomplete'.

- One of the small discussion groups in which 3 focus participants were present hosted a particularly vociferous woman. Whilst it was felt that this had some impact on the evening, serious obstruction to dialogue was avoided by the presence of a group facilitator.

- Two people out of the six questioned found that the topic itself was not controversial. This was believed to be because of the familiarity of the issue in the media, and the participant's personal experience of difference.

We are so used to it being in everyday life, being talked about so much. Its not as controversial as it was 20 years ago.

<div align="right">(Focus group participant)</div>

4.4 Opportunities

- The group reacted positively to the atmosphere provided by the Fellow's Room. It was found to be appropriate to the event content.

The room added to the feel because you are there to discuss important and philosophical matters.

<div align="right">(Focus group participant)</div>

- Focus group participants had expected a more formal atmosphere at this event, such as would be found at a lecture. They were, however, positively surprised by the format the event took when the audience were divided into small groups.

This was a great format; it got everyone involved.

<div align="right">(Focus group participant)</div>

- Although the format of the event was new to the participants they found it easy to understand and adapt to. It was said that as students they are used to discussing issues in small groups.

- The focus group participants were not aware that this kind of event occurred at the Science Museum. It was felt that the event showed the museum to be moving away from childhood associations which the group had mentioned at the first meeting, and that it opened up new possibilities of interaction - which is something the group enjoyed.

  … More interactive side rather than Museum's with displays… More, 'Come and discuss things'.

  (Focus group participant)

- Several participants felt that they wanted to further discuss the issues raised by this event. Whilst some people felt that the event itself was too short, other suggested alternatives for continuing the debate such as another discussion that leads on from the first.

A follow up event… A series of discussions… Each focussed on a different facet of the same issue.

  (2 focus group participants)

- Although participants were aware of the continuation of this event through an online chat with one of the speakers, none of them choose to take part in this.

- One person stated clearly that she was not interested in continuing this debate via the Web:

The Internet is a good idea but it doesn't interest me… It'd be nice to actually meet up again… You can get more involved with something like that.

  (Focus group participant)

- Three out of the six people questioned said that they had continued discussion after the event had finished. This was not only between the people who had attended the event; one person talked about the issues raised with an outside party and two participants had continued discussion in a pub immediately following the event.

Dana Centre User Group Report

Young Christians

Meeting 1

August 2003

Brookie Fraser Jenkins

1. Executive summary

For this audience, as for previous focus groups, an event must be worthwhile in some capacity.

- This could be an educational worth, where the audience learn something from attending the event.
- An experiential worth – such as a unique opportunity to see something or someone that they would not normally have the opportunity to see.
- Or beneficial to a greater cause, where there is a clear outcome to having attended the event.

Relevance came up again and again for this audience, and has come up with other audiences. Our target audience will only engage and make the effort to come to an event if they have experience or knowledge of the topic.

Some members of this audience already meet to discuss issues.
Participants in this focus group are involved in groups that meet regularly to discuss a wide variety of issues. Christian and other religious communities would be suitable areas in which to find new audiences.

Echoing Dana aims, this audience are keen to talk about topical subjects, and to have the opportunity to meet and question experts in the field.

The group had a lack of confidence in the media and their role in conveying information to the public. However, this presents an opportunity to the Science Museum to build on our reputation, made clear in previous evaluation, of being a reliable information provider.

2. Introduction

As part of research into the Dana Centre audience, and in accordance with the Wellcome Trust contract for the Dana Centre, this focus group was recruited with members of the Dana Centre target audience. This first meeting with the group represents the 8th focus group conducted for the Dana Centre. Following this meeting, the group will be invited in to watch a Naked Science event and attend another focus group immediately afterwards. Topics discussed included:

• Exploration of what issues the group consider to be controversial.
• What issues do the group feel strongly about and why?
• Establish actual involvement, if any, in issues?
• Attitudes to the Science Museum.
• Attitudes to Science.

3. Methodology

The focus group consisted of 7 people aged between 18 – 45 and who are all members of the same Christian church. Participants professional backgrounds differed, ranging from Designer to Medic. The session met for 90 minutes, from 6.30 – 8.00 in the Science Museum.

4. Findings

4.1 Current issues

• The group reacted most strongly to issues that are relevant to them. For example medical issues were relevant to some group members, and this consistently provoked debate during the session. It was clear that the Medics in the group were already interested in these issues and as a result had formed opinions about them that they were keen to share.

I don't like it when the Health Service get slagged off. Because the fault doesn't lie with them. It lies with the people who give them money and they give them less money every year…   (Focus group participant.)

• Christianity was relevant to all participants at this focus group, and accordingly this subject was raised on several occasions during the session. This is an angle that will always be interesting for this group of people. It is both relevant to group members and is a subject that they have expertise in. In addition, some participants were keen to represent the face of Christianity to the public. As such, this is a group of people who may be keen to attend events to describe their point of view.

• The group were bored by marketing that focuses on shock or smut as a tactic for engagement. Participants were quick to acknowledge these tendencies but found them too prevalent in society.

…but its actually got to the stage now, like you say, where you're no longer shocked by it because you look at it and think, "oh yeah, another naked body" ….and now its blazoned everywhere. (Focus group participant)

Furthermore, some group members perceived this as evidence pointing to a trend in contemporary society that they found to be concerning:

Well, I'm not happy with it to be honest…. It's not un-enjoyable to look at, but in terms of where out society's headed and how much undermining the value

of sex and the value of the human body, I think it's just really worrying…
(Focus group participant)

- Subjects of interest to this group included: Medicine, Science vs. Religion, Human rights and the bible, Refugees, and War.

4.2 Engagement

- Only 2 members of the focus group had been actively involved in an issue before. In one instance this related to the recent anti-war demonstrations in Hyde Park. It is interesting to note that this member of the focus group had felt a personal attachment to the issue:

  Partly I went (because) my friend's Dad was taken as a hostage in the last war, and they came up for it, so I partly went to support them… but I did want to go on the march partly because I just get incredibly scared every time I think of George Bush… (Focus group participant)

  In the second instance, the participant had also committed to the recent anti-war demos, the campaign to abandon 3rd world debt, and to a personal boycott of Nestle products.

- Some other group members had considered becoming involved in the anti-war demonstrations but had eventually decided against it choosing instead to pray about this issue. And finally, other group members had not been motivated enough to attend.

  Stop the War coalition had an extremist view… I suppose had I felt really strongly about it I would have gone. (Focus group participant)

4.3 Barriers to engagement

- This audience felt that were apathetic in relation to controversial issues. Although they were aware of this however, it would be hard to get this audience motivated in relation to controversial issues.

  I get the impression that our generation are a bit blasé about big companies like Nestle and Mc Donald's that are exploiting the third world, and we sort of stop buying a couple of Kit Kats but we don't really do enough about it. (Focus group participant)

- At times, participants displayed a feeling of helplessness that prevented them from engaging with an issue. This is something that has arisen for other focus groups as well, where there is a feeling of 'what can I do?' Coupled with a lack of information to understand the issues, this presents a barrier through two kinds of helplessness; intellectual and practical.

  I find it very difficult to get in to (Asylum Seekers), largely because I find it difficult to grasp what the main issues are and if there is any solution that would work and appease anybody. So I just kind of decided that there probably aren't and therefore don't bother. It just doesn't get me interested. (Focus group participant)

- As with previous focus groups, this audience felt that their commitment to an issue would also depend on the outcomes of this commitment. There is a desire to see a tangible result from engagement with an issue.

Its all very well meeting and talking about something, but if you don't actually achieve anything then there isn't any point. (Focus group participant)

4.4 Opportunities

• Members of this group had a particular focus on learning. There was a strong desire for the events to be worthwhile on a personal, and broader societal level.

• It was felt that press and media coverage of controversial issues was biased. As the Science Museum, we can emphasise our neutrality by continuing to represent all points of view about an issue and thus gaining the confidence of our audience as a reliable information source.

• This audience wanted to talk to and question experts where possible. This has also been raised in previous evaluation as a motivational factor for attending events. As an organisation with access to real objects and reputable speakers we should seek to fulfil this requirement of our target audience.

I would see a lot of benefit in the educational experience…. Having genuine experts telling us and being able to question them about things that are raised. (Focus group participant)

• Echoing the aims of the Dana Centre, this audience showed an interest in issues that are topical and up to date.

Within a week of some big issues coming up, there could be a debate that happens, so I'm sitting at home reading a newspaper or watching the news and… I really want to grill someone who knows what that's about… (Focus group participant)

• To reach other people from the same audience as this focus group, there is an opportunity of using their existing networks and communities. This audience already meet up to discuss issues on a regular basis. As a group of young Christians, this is a group who have a voice and are keen to use it!

The groups that I'm involved with would love it if the Science Museum came and pitched an issue to us, gave us a little bit of stuff to work with and provoked a discussion…(Focus group participant)

4.5 Attitudes to the Science Museum

• There were some negative perceptions of the museum. For example, the idea of the Museum being too big and having too much to look at. It was also felt that the Science Museum was not a place for them (independent adults), so much as a place for children.

4. 6 Attitudes to events at the Science Museum

• There were some initial positive reactions to the idea of events at the Science Museum. Participants thought that it would provide an opportunity

to meet other people, and that it might be controversial, which was placed in a positive light.

- There were some negative expectations of events run by the Science Museum. It was felt that the other audience members might be rather 'fuddy-duddy' *("tweed jacket")*, and that the event itself would be complicated or exclusive.

I would just feel out of my depth. (Focus group participant)

Dana Centre User Group Report

Young Christians. Meeting 2:

Stem Cell Research: What are the Issues?

A collaboration with the New Economics Foundation

August 2003
Nina Firkin

1. Executive Summary:

- The event worked well for the target audience who found it appealing and accessible:

    o The event was presented at an appropriate level for the target audience who generally had little background knowledge about the subject.

    o Virtually all of the focus group participants commented that the event was interesting and that they had learnt something new about Stem Cell research.

    o Most participants left the event wanting to know more about the subject and continue their discussion of the issues raised.

    o The event also challenged many of the participants' strong beliefs on Stem Cell research and one participant actually left having changed their opinion on how acceptable they felt Stem Cell research is.

- The format of the game allowed participants to contribute to discussion and got them engaged with many of the issues raised by Stem Cell Research. This was true even if the focus group participant had little background knowledge on the subject as the structure of the game gave opportunities to present which issues to do with Stem Cell research were important to them.

- There was, however, criticism by many of the participants that there was simply not enough time to discuss all the issues that were raised by the game properly. Many participants also felt that there were various points in the game that the group could have used a facilitator with knowledge of the issues and game to help focus on what they were discussing because it wasn't always clear from the instructions which cards or bits of paper were for what.

- A couple of group members mentioned that because they didn't know much on Stem Cell research before they came to the event there was a concern that they didn't have any basis for comparison for what they were being told. It has been suggested by previous focus group work that people can be suspicious of scientific research, and that the Science Museum must be wary of this when providing information.

- Balanced against this is that people left this event with the impression that the Science Museum is forward thinking and that it is an accessible place.

2. Recommendations:

- It is clear that the format of the game was effective at engaging the audience in a dialogue. Participants said that they found the event interesting and informative. To improve the game for future use within the Dana Centre:

    o The instructions in this game are lengthy and need to be made extremely clear to avoid confusion for participants. In a previous trial, the event facilitator was able to move around the room, answering questions from individual tables. This was an effective way of reducing confusion without requiring lots of staff members, and should be continued in future sessions of the game.

- To allow more focussed discussion, the number of issues discussed by each table needs to be limited so that participants feel they discuss at least a couple of issues thoroughly.

- Most participants said the end discussion was too short and felt rushed. In addition, observation suggested that this part of the evening was the weakest in terms of dialogue. However, virtually every single participant in the focus group said that they would like there to be some sort of follow up to this event where they could discuss the issues further or have questions answered.

  - This second half should have a clearer structure and focus to allow for more discussion.

  - This is also an opportunity to promote discussion on-line in a follow up to the event. Focus group participants indicated that they were keen to have further discussion of the issues raised, although we know from previous evaluation that this will not naturally occur and must be heavily promoted if it is to appeal to our target audience.

- Participants felt they would have found it helpful if some background information or the main issues of the topic had been introduced to them before the event. Whilst the beer mats provided some pointers, they did not fully satisfy this need. As the event was, many participants felt they spent a large proportion of time trying to work out what these main issues were. In the future, it would be helpful to give a short introduction at the start of each event to highlight the main issues involved. Alternatively, send all participants an email covering background information a couple of days before the event.

- It is clear from the focus group that participant's felt discussion was most interesting when there was a mix of opinions in their group. To ensure this happens, a method of evaluating everyone's views needs to take place before the event so that each table has people with a range of opinions. This could be done via a vote on the web or vote before the event starts to assess participant's opinions.

- Several participants said that they were concerned about whether the information they were receiving during the event was biased toward a particular opinion. Many participants said they would have felt better equipped to make informed decisions if they had had access to information from places other than the Science Museum. At future events, information should be clearly referenced and sourced from a variety of places.

3. Introduction:

As part of Dana Centre evaluation, focus groups have been recruited with the target audience. This was the 9th focus group to meet. The meeting took place after a Naked Science / New Economics Foundation event in a pub in London.

The main topic areas covered in this session were:

- Likes and dislikes about the event they had just seen.
- How to improve it?
- Were they challenged by the event?

- Did they learn anything new?
- Ideas on how the Science Museum could follow up this event.

4. Event format:

Stem Cell Research: What are the issues? was delivered using an experimental event format, *DEMOCS* that has been developed by the New Economics Foundation. The audience was divided into 5 groups of approximately 6 people each. Each group was given a game to play, which raised the issues surrounding Stem Cell Research for discussion. Game play lasted for 90 minutes. At the end of the event all the groups were brought back together again to discuss the issues raised as a whole, lasting for a further 30 minutes.

5. Methodology:

5.1 Observation and profile:

Detailed observation notes were taken throughout this event. There were 3 observers taking notes on 3 separate audience groups. A short entrance survey was conducted to establish the audience profile at this event. These findings are available in the associated event evaluation report.

5.2 Focus group:

8 young members of the same Christian church were recruited for these focus groups. The group represents non-local adults aged 18-45 years old. The Naked Science event was observed and notes taken. After the event the focus group participants were split into 2 groups of 4 and invited to share their opinions on what they had just seen. Both sessions lasted for an hour each. Notes were taken and both focus groups were recorded.

6. Results:

6.1 Strengths:

- Many of the participants said that the night was interesting and that they had learnt information that they hadn't known before. The event seemed to provide an opportunity for many of the participants to learn more about a topic that few of them seemed to know much about despite having strong views on the subject.

  "It was very interesting. Not knowing a lot before it allowed me to think through issues."

- Participants felt the event wasn't just designed by stem cell experts for other experts to take part in as some participants had feared prior to attending. This meant that everyone, no matter what level of knowledge they came to the event with could participate in some way.

"… the New Economics foundation guy said it would work better if you had no background knowledge of the subject."

  "It targeted well those of us that hadn't broached the subject or worked outside of science professions."

- Many participants enjoyed contributing to the discussion and commented positively on how the structure of the game allowed for contribution.

  "Was nice to be able to talk about things in a clear calm way…it gave a chance for people to listen to each other."

  Several participants commented on the part of the game when they had to select cards with opinions that were important to them from those with a range of opinions on them. Participants felt that this part of the game meant everyone could contribute to the discussion.

  "*When we had the cards and we had to chose which was most important which made me feel like I could contribute…"*

- The timing of the night was raised by many of the participants. Many said they would have liked the event to be longer. As it was they felt quite rushed through the issues and felt they could have used more time to discuss them further.

  "I wanted to find out what the man on the other side of me thought but there wasn't enough time."

  "I wanted to make more points but was really conscious of the timing."

6.2 Opportunities:

- Because the event offered new information on the topic, many of the participants found the views that they had come to the event with were challenged. Several participants said that the event had challenged them to think more about the issues surround stem cell research. One participant said that the event had altered his original view on completely writing off stem cell research on the basis of ethical reasons.

  "I had to think about what we would actually be giving up if stem cell research was stopped…if embryos are being created anyway and there are spare embryos that are being created and there is nothing that is going to stop that then maybe we should be using them."

- When asked to describe their views on the Science Museum couple of participants said they had been put off visiting the museum in the past. One participant said that the fact that its called a museum put off his age group from visiting because it generates images of 'old things.' Another participant said that it was not somewhere that they would go often because of the large amount of fixed exhibitions -*"It's too static."* However after the event most participants had very positive things to say about the Science Museum. Many of the comments they made focused on an idea of the Science Museum being very forward looking or accessible to people. This is in contrast to the impression expressed by a previous focus group that the Science Museum is just a place for children.

- Many of the participants in the focus groups felt that they would like some sort of follow up to the event.

  - Many participants thought a website would be the most effective way of following up. As part of the website they suggested a forum where they could take the issues raised by the event and discuss

them further with other people present and not present at the event. Other participants suggested that a site on-line where they could get any questions they had about the subject answered by specialists would be a helpful way to follow up.

- o Several participants suggested that now that they had some sort of basis of knowledge on the subject they would be interested attending a lecture. They made it clear however that any lecture would have to be aimed at the 'lay person' to make it truly helpful.

- o Other participants said might be helpful to have a Science Museum contact come and visit their church group so that they could extend what they learnt during the event to those back home.

6.3 Weaknesses:

- Some participants complained that parts of the game were not clear. Sometimes the wording of the instructions or statements was confusing. And it was not always apparent what particular pieces or cards in the game were for.

  "There was some A4 sheet paper that had a trail on, what was that for?"

  "Didn't know what to do with the beer mat."

  "We thought it was part of the game…"

  This led to people becoming unfocused and unable to pin down issues at hand. Many participants commented that they would have liked a facilitator or 'games master' at each table who had background knowledge of the subject and game to explain everyone's role and keep the group focused on the issues they were discussing.

- Several participants commented that they were more interested in discussing the issues raised by the event than playing the game and so didn't pay much attention to the game.

- How mixed the views of the people in each group were, varied from group to group. Whilst some participants felt the mix of people in their group was good and allowed for discussion, other participants were aware of their group not being very mixed at all. One participant noted that because 3 out of the 6 people in his group were Christians it meant there was not a range of views being expressed in the game.

- Many participants felt the event would have benefited from an initial introduction to explain the main points of the topic up for discussion. Many with a more limited knowledge of Stem Cell research felt like they spent a lot of the game trying to work out what the main issues of the topic were rather than discussing those issues.

- Several participants said that the discussion between all the groups at the end of the event didn't really help to clarify things but introduced even more ideas.

  "I would have preferred to get hold of my groups and my ideas and leave rather than more thoughts from others."

However, several participants also pointed out that at the end of the night there was a large cross over of issues raised by each group. These participants suggested that it might have been better for either each group to be given one major topic to debate, or for each group to only present one of the topic that they had discussed so that all topics were presented in more depth.

"… (during the final discussion) there was a lot of cross over between the groups. It might have been just as interesting or more interesting to stay in your group and have the opportunity to get some discussion going…maybe it might have been good to break for 5 minutes and each group come up with one thing to share…"

"I felt overwhelmed. I could have spent the evening discussing just one issue."

Because of the lack of time many participants felt that they didn't really have time to address all the issues raised in depth, instead many felt they received a more 'panoramic view' of the major issues. Some felt they discussed what the major issues were but didn't actually have time to discuss each one of them.

"Seemed to me that the evening was about 'what are the important issues' rather than discussing them."

6.4 Threats:

- A concern raised by a couple of participants was that because they had come to the event with such a small degree of knowledge about stem cells, they really weren't sure whether the information they were presented with through the course of the evening was really an accurate portrayal of all the issues involved.

   "I was a little conscious of the fact that I know so little about this subject I don't know what information I was being given and what I wasn't."

   Because of this they felt they would have benefited from following the event with some sort of input from several independent sources on Stem Cell research to give them a chance to clarify their ideas.

APPENDIX H
Event Evaluation Reports

Naked Science Event Evaluation Rapid Response Stem Cell

30th July 2002

Summary

- The event worked well and was enjoyable and informative

- Although there were technical problems with the live link, access to the 'real thing', in this case the scientist who had conducted the work, was very powerful. There is definitely potential to use global links in events at future events.

- The on-line vote worked well and could be used to promote future events.

Recommendations

- It must be clear in all communications with both the chair and the speakers what we want their contributions to be. We must fully brief the chair and recommend ways of keeping speakers to time.

- We need to be clear in all our communications with speakers/contributors what <u>we</u> want to get from this event and what we want our <u>audience</u> and <u>speakers</u> to gain from the event.

- We have to recognise that our agenda may not be the same as that of the speakers or our audience.

- We must fully brief the Chair about how we want the event to run e.g. the times given to each speakers, why we are running the event in this way and what role we would like them to take e.g. dialogue facilitator, devil's advocate, somebody who can summarise the speaker's points. This should be done via a document, which outlines recommendations to chairs or professional facilitators. This should be followed up to in person to ensure that the chair understands/feels comfortable with their role.

- We set the running order of the presentations with the Chair. We can be flexible but we do not let a speaker's agenda override ours.

- We should balance our needs and the needs of the speakers and the needs of the audience e.g. we may want speakers to remain seated to create informality however they may feel more relaxed standing to give their presentation.

- We need to consider how we can ensure that 'ordinary' members of the public feel able/want to contribute to the discussion board. Over a third of respondents to the web-board had a special interest in the field. We need to be aware that such a discussion board could be hi-jacked by lobby groups and therefore provide a forum for the 'usual suspects'. What can we do to prevent this happening?

- We must consider ways in which we can facilitate discussion happening on the discussion board – the posting on individual, unrelated comments is not dialogue.

Event Format

The event was held in the lecture theatre of the Science Museum. There were five speakers, including one based in America who was communicating by live link. Each speaker spoke for 10-20 minutes. The chair was a scientist from Imperial College. The event lasted 1 ½ hours and was followed by a wine reception where members of the audience could talk to the speakers.

Methodology

Prior to the event, audience members were recruited and asked to complete an email questionnaire that was sent out to them after the event.

Results

Audience Profile.

The event was attended by 100 people, of which 55% were female. The age profile of the audience is shown below.

Age	%
<19 yrs	0%
19-35	50%
36-50	20%
51-65	20%
>65 yrs	10%

The audience appeared to be well informed and from a variety of backgrounds (both the arts and the sciences). A vocal minority from the pro-life lobby were also present.

The audience had found out about this event from a variety of sources with Time Out being the most effective source (see below)

Found Out From	%
Time Out	32%
Word of Mouth	22%
Science Museum Website	5%
Science Museum other (naked science emails/flyers, visiting Museum)	24%
Other Organisation (eg RCA/IC/Prospect/Alzheimer's Society)	16%

What worked well

• The event proved that we can successfully produce a rapid response event. The event was held 3 weeks after the news broke and the subject was deemed topical by 12 out of the 17 email respondents.

• Over 100 people attended from a wide variety of backgrounds; including professionals working in the field, pro-life lobbyists and those working in the arts (e.g. an artist and a novelist). About half the email respondents felt that the event was aimed at the informed public.

• There were three factors to the event that the email respondents particularly liked. The first being the expertise provided at the event i.e. the quality of the speakers, what participants learnt, intelligent debate. Secondly, some of the respondents explicitly stated they liked the fact that different viewpoints were represented, this was always mentioned in conjunction with information provision.

" [I liked] the current information about the topic and the exposition of some different points of view"

Thirdly several respondents also mentioned the informality of the event as something which they liked.

"The informal nature of the event. The variety of experts in attendance"

- Overall, email respondents found the event informative (11/17 respondents), interesting (14/17) and thought-provoking (13/17). Only 2 respondents did not use any of these three adjectives to describe the event. Furthermore, three quarters of the email respondents stated that they learnt something new at the event (either about the science and/or about the issues surrounding stem cell research).

- The majority of the email respondents found the event enjoyable.

"I hugely enjoyed the event. My personal interest is in engineering and aerospace"

- The on-line vote was well used and the web-board did generate some discussion (see 'On-line presence' below). These are both things which could be built on for future events and which could provide both information and a forum for discussion before and after an event.

- Whilst there were technical problems with the live link it did provide unique access to the real thing i.e. the scientist who had conducted the research which had made the news. It is also a way of providing a global link – which could be exploited in the future in discussions involving legal/ethical issues where different countries have different legislations and/or cultural attitudes.

- Although the speakers had fixed microphones on their table, in actual fact they ended up using the roving microphone – this may have been to do with a 'transfer of power' that comes with exchanging a mic. This is a good way for us to retain some control over an event – by handing a roving microphone to the audience to signify it is their turn to speak, removing the microphone from a speaker/audience member to indicate that they should listen.

What could be improved
- There were too many speakers (5) for an event of this length (1 ½ hours). This meant that there was insufficient time for audience contributions. This was commented on by the majority of email respondents as something that they didn't like and which could be improved at future events.

"There were far too many speakers (many who had very similar views) hence there was way too little time for audience discussion, especially as it was supposed to be a participatory event"

We need to balance provision of information and viewpoints (from invited speakers) with the time needed to allow dialogue to develop.

The problem of too many speakers was compounded by the fact that one of the speakers spoke for 20 minutes rather than the 10 minutes agreed on.

- Over 50% of the email respondents agreed with the statement "My viewpoint was not challenged", the other 50% agreed with the statement "My viewpoint was challenged but not altered". One of the objectives of the event was to challenge people.

- Several people commentated on the 'bias' of the panel towards scientists, these respondents weren't pro-lifers. This seemed to be because some people felt that the pro-life speaker was emotional and argumentative, which they did not like and this highlighted the fact that there was only one speaker from this standpoint.

    "A second speaker against stem cell research might have put forward a more sympathetic and less aggressive opinion. Therefore giving a more balanced debate"

- The technical problems with the live link were something that was mentioned by several respondents as something that was disappointing at the event. Whilst the positive side to such technology could be seen, when it goes wrong it provokes a strong negative reaction – especially for us because we are the Science Museum.

On-line presence

- In the period 21st July until 31st August, approximately 1,900 people took part in the online pop-up vote which appeared on the home page. This represented roughly 2% of the people who visited the Science Museum home page in the same period.

- About 1,500 people visited the Naked Science home page which contained information about the stem cell event. 319 people visited the page providing information about the speakers and about stem cells.

- Approximately 750 people viewed messages put on the discussion board. On average each person viewed 6 messages each.

- 36 people (excluding members of the Science Museum) registered to record their point of view of which 27 (75%) actually contributed to the discussion. These 27 people posted 42 messages in all. Two thirds of contributors posted 1 message. Of the 27 respondents, 6 were from pro-life groups (CORE, LIFE, SPUC) a further 2 respondents had a professional interested in the field (a geneticist, a member of the Parkinsons Society).

- There were three main threads to the discussion which had been posted by members of the Science Museum. These were 'When is an embryo alive?', 'Adult Stem Cells', and 'What is the big deal?'. The majority of respondents replied to these threads – only two respondents started new topics of discussion. 'When is an embryo alive?' garnered most responses (23) followed by 'What is the big deal?' (10) and then adult stem cells (6).

- The initial three threads acted as stimulus for the ensuing on-line debate although this is not what was intended. The majority of respondents pressed the reply button to post a message (24 people) rather than the post a new button message (3). This could be due to a lack of understanding about a) how to post a message and/or b) because people wanted/needed to respond to stimulus material in order for a discussion to start.

Naked Science Evaluation Report

Science of Beauty

26 October 2002

Location: Metamorphing Gallery, Science Museum
Duration: 5 ½ hours
Speakers: Lesley Kerman (artist), Rob Kessler (artist), Alice Angus (curator), David Floyd (plastic surgeon), Alison Austin (medical Devices Agency), Lorraine Winslade (holistic therapist), Sue Guest (holistic therapist), Patience Agbabi (poet).

1. Executive Summary

2. Event format

3. Methodology

4. Profile

5. Science of Beauty recommendations

6. Science of Beauty Indicators of dialogue

7. Science of Beauty 'what went well'

8. Science of Beauty 'what could be improved'

9. i. Artists tour

   ii. Handling session

   iii. Holistic therapies

   iv. Poetry reading

10. Comments from the speakers

Executive summary

- Approximately 80% of the attendees to this event were adults aged 18 – 40 however not all of these were independent adults, some were parents. There was a significant percentage of families (with children under 12 yrs) at this event.

- As a space, the Metamorphing gallery divided successfully into 4 separate areas each hosting a different section of the whole event. However as the event was held during half term, the Metamorphing gallery was subjected to problems that might otherwise have been avoided:

  o The museum tannoy announcements caused a serious disruption to all four sessions. Whilst the tannoy cannot be removed, during half term the announcements were probably more frequent than normal. Of the 4 speakers approached after the event, 2 of them commented negatively on the tannoy announcements. We need to consider the timing of an event in terms of how this might affect the audience and event space.

- This event proved that dialogue can occur when a drop-in format is used. However, dialogue did not automatically occur and needs to be carefully facilitated to ensure that the session moves away from basic question and answer, and towards true dialogue. There were no indicators of dialogue during the art tour and poetry reading, however there was some dialogue during the handling session and holistic therapies.

- The speakers at this event were not aware that their session was one of a group of four to be held throughout the afternoon. To be fully prepared, the speaker's attention should be brought to the overall structure of the event. This was something commented on by 2 out of the 4 speakers interviewed.

- The public were seen to successfully engage with scientists and non-scientists alike, and all 4 of the speakers contacted commented positively on the audience. For example, the speakers were surprised by the opinions of members of the audience and by level of interest that they displayed.

- Interviews conducted with the speakers after the event brought up several concerns. These related to the organisation of the event, its location and the audience who attended. Although there were specific grievances mentioned by each speaker, the overall reaction to their experience as a speaker at this event was positive. Furthermore, some indicators of learning were evident in interviews with 3 out of the 4 speakers contacted after the event.

- **Artists tour:** As an art tour, this session worked well. However, as a stimulus for dialogue the session proved more problematic. Most input from the audience was on a question and answer basis and did not move towards dialogue. There was not enough time allowed for dialogue to develop between the speakers and the audience. When questions were posed they were quickly brushed over, therefore not giving the audience the opportunity to react.

- **Handling session:** This session provoked a limited form of dialogue between the speakers and the audience, as well as between audience

members themselves. Most of the questions posed during this session were factual, however at times, the questions probed the ethical side of plastic surgery.

- **Holistic therapists:** This session continued well beyond its allotted time frame. Although the speakers were happy to stay longer than planned, other sessions simultaneously taking place meant that attention was drawn away from the therapist's needs. The speakers commented that a lack of refreshments made it difficult for them to continue the session. To ensure that the speakers and audience are comfortable, a clear beginning and end time is needed.

- **Poetry reading:** Audience were reluctant to pose questions during the poetry reading, and the poet was required to push them. As an experienced facilitator she was able to do this, however a less experienced speaker may well have had some difficulty. Reasons for the audience's reticence may have related to the timing of this session at the end of the day when the audience were tired. It is also possible that the formalised seating arrangement restricted people from contributing, or that the audience found it difficult to ask questions of a poet.

Overall Recommendations

- At this event, only some of the speakers were wearing a mic. At those times when a mic was not worn, it became difficult to hear the speakers from the back of the group. In future **all** of the speakers need to wear a mic so that they can be clearly heard by all the audience.

- A certain amount of background noise could be heard throughout this event. The sources of this noise included exhibits already within the space, museum wide tannoy announcements, visitors who were not attending the event but were looking at the gallery itself, and noise from other sessions that carried on beyond their agreed end time. It is possible that some of these could have been reduced by holding the event at a different time of year when the museum is not so busy; on that particular day there were nearly 16000 visitors to the museum.

- Whilst the fluid, drop-in format used at this event worked well, dialogue did not automatically occur. Dialogue does need to be facilitated to ensure that it moves away from a question and answer session towards true dialogue. There are a number of possible ways for this to occur e.g. speakers could be briefed about our aims for the event (dialogue) and ways in which this can be achieved e.g. asking the audience open-ended questions, asking the audience how they feel about something, asking the audience about the moral/ethical aspects of an issue.

- Speakers were not aware that their session was part of a longer day of events.. In some cases, this prevented them from seeing other sessions that they subsequently became interested in. Although speakers are thoroughly briefed about their role, it would also be useful for them to understand the wider picture of both that day, and the Naked Science framework itself. Where appropriate they could also be actively invited to attend the other events.

- On one occasion it was unclear who was responsible for opening the session. As a result the session suffered from a 'false start' that was distracting for the audience. One of the speakers also commented that although dealings with the Science Museum were thorough, there was a lack of consistency about who they were talking to. When there are several different sessions taking place on the same day, it becomes crucial that each speaker is aware of **one** person responsible for them and their event. This should prevent confusion over the session logistics and would be reassuring for the speakers. This will become increasingly important when there is collaboration with other institutions.

- 2 out of the 4 sessions at this event went on for a much longer period of time than was intended. Although the speakers did not object to this, it was unclear for the audience whether the event had finished or not. At times this also provided a distraction from the next session in terms of background noise and visually drawing people away. At an event which is made up of separate sessions, it is imperative that each session has a clear start and end point.

Event format
'The Science of Beauty' was made up of 4 separate events brought together under the same title. Events started at 13.00 and were brought to a close at 17.30 although some of the speakers were talking to the public after this time. The afternoon consisted of four sessions; a gallery tour, handling session, on-gallery massage, and a poetry reading. Each part of the event was attended by approximately 20 – 30 people, but the structure was fluid allowing public to come and go throughout.

Methodology
Observation notes were taken by Claire Tomkin and Brookie Fraser Jenkins. Following the event, a short telephone interview was conducted with the speakers. Due to physical difficulties in collecting information, no email questionnaires were sent out to the public following this event.

Profile
At any one time there were approximately 20 - 30 people attending each part of the event and approximately 30 – 40 people in the rest of the gallery. Approximately 80% of attendees were in the 18 – 40 age category with an even split between male and female. However, within this age range there was a mix of independent adults and parents. The other significant age group was children under 12. The ethnic background of the audience was approximately 90% White.

Overall: Science of Beauty - What went well

- The audience were part of the core Dana target audience; the audience fell into the 18 – 40 age category and the majority were independent adults. However, there were also a significant number of families attending who are not part of the core Dana target audience.

- Facilitators successfully encouraged people to attend the events by approaching visitors already inside the gallery and drawing their attention to what was happening.

- The event drew attention to works already in the Metamorphing Gallery. This occurred both by the speakers pointing out some of the works (during the poetry reading) and by the positioning of the speakers in the space (handling session).

- The public's reaction to the content of the events was surprised and interested.

- The speakers were surprised by the audience that attended the event, and reacted positively to this. Preconceptions of the 'typical' Science Museum visitor were challenged by being able to meet visitors face to face in a relatively informal environment.

  (I was) pleasantly surprised at the way the audience kept up with it all the way through.(Speaker)

- A few audience members stayed to see more than one session, which would suggest that they felt engaged and comfortable at the event

Overall: Science of Beauty - What could be improved

- Background noise proved a distraction throughout the event. Most notably the museum tannoy made many interruptions to the speakers. There was also some noise given off by exhibits in and just outside the space itself. As a space the Metamorphing Gallery has an intimate and close atmosphere, which led to the tannoy interruptions feeling particularly disruptive.

- Only a few of the speakers wore a mic. As a result the others were difficult to hear.

- One of the speakers commented that they found it distracting for other sessions to be setting up whilst they were still talking.

  Difficult to concentrate when they were setting up tables for the next bit. (Speaker)

- Some of the speakers reacted negatively to the space itself. It was considered too dark and overcrowded. This perception was linked to a pre-conception of museums as dimly lit places with objects in cases.

  (It was a) dark dingy corner of the museum. Couldn't see the audience very well. Not good lighting. In museums (things are) dimly lit…(Speaker)

- It was not clear to the speakers that each individual session was part of a broader spectrum of events. In one case this prevented the speaker from being able to attend the other events as they had already bought a train ticket and could not change it.

- It was only in 2 cases that the audience really engaged the speakers in dialogue (the handling session and holistic therapies). At other times, the involvement between audience and speakers was question and answer only. Furthermore when dialogue did occur, the speakers stayed talking to the audience for much longer than was originally planned (2 hours rather than 1 hour).

- For 2 of the sessions the 'drop-in' structure positively contributed to an informal atmosphere. In turn, this can be said to have aided dialogue. However, this was less appropriate for the other sessions. The artist's tour required its own structure (a formal tour that did not focus on dialogue) which did not allow for a fluid audience i.e. people could not dip in and out. The structure of the poetry reading contradicted the formalised seating arrangement and resulted in large numbers of the audience standing at the back of the group.

Artist's tour

i.   Summary
- Most input from the audience was on a question and answer basis and did not move towards real dialogue.

- A few members of the audience stayed behind at end to ask questions.

- Content throughout the tour varied. Initially the information provided was purely factual, "this is attributed to… depicts the saints who were…". The audience seemed to be more interested however when personal

information was given, "I had this idea that…" During this part of the tour, the audience seemed more relaxed and were able to ask a question.

ii.   Recommendations

- It was difficult to hear the speakers from the back of the group. To avoid this physical barrier, speakers need to have a mic at all times.

- The tour moved rapidly through a large number of the works on view, many of which were small and therefore difficult to see. Focusing on the larger art works would have facilitated an otherwise difficult view from the back of the group.

- At times, the tour contained cultural references that required a degree of specialised knowledge, "… Arachne turned into… some of you may know…" (Speaker) However, the Dana target audience does not include art specialists. Speakers need to be made aware of the target audience for their event so that they can pitch their content appropriately.

- As the nature of this art tour differs from others the speakers may have given, the Dana Centre notion of 'dialogue' needs to be clearly understood by the speakers. Guidance on questioning a non-specialist audience for example, would have aided dialogue in this instance.

Handling session

i.   Summary
- During the handling session, dialogue continued for 2 hours with no need for intervention from a facilitator. Note that the dialogue was with constantly changing members of the audience, rather than the same people for 2 hours.

- During the handling session there was as much dialogue between groups of the audience as there was between the speakers and the audience.

- During the handling session, questions were mostly factual and only varied on occasions into the ethical. The predominance of factual questions may have been because the large numbers of audience members attending, prevented a longer engagement with the objects and speakers.

ii.   Recommendations
- This session proved to be one of the most popular. There was always a large number of people around the handling tables (approx 20 people). However, this resulted in the area feeling crushed and made it difficult to approach the tables. It may also have had an effect on the development of dialogue during the session. Ideally, the objects and speakers should be given more room so that everyone (speakers and audience) has enough space to move freely.

- The handling session involved a significant amount of repetition on the part of the speakers. This may have been due to the drop in format which meant that the audience were continually needing basic information. It was observed that the audience were frequently asked the same questions, thus requiring the same answers or comments and therefore staying within the question and answer format. If dialogue is to occur, the session must move beyond the level of information provision. To help this process there might be labelling of the exhibits on display, a clear start

and end time so that all the audience have heard the introduction, or a series of shorter sessions so that the information can be conveyed bigger numbers of people at the same time. .

Holistic therapies

i.   Summary
- The questions asked during this session were mostly factual.

- Some of the participants at this session had also been to the handling session previously. This suggests they felt involved and comfortable at the event.

- Speakers involved audience from a very early stage by posing a question within 5 minutes of the session beginning. 'Does anyone know what holistic means?'

ii.   Recommendations

- There was some confusion at the beginning of this session. Instead, it would have benefited from a clear start and end point. It should be made clear to the speakers who is in control of their session (whether them or the facilitator), so that they do not suffer a 'false start'.

- As a space the Metamorphing gallery suffered from being subjected to museum wide tannoy announcements. In this session, which was characterised by a calm atmosphere, they were particularly distracting for the audience and the speakers. This kind of session would have benefited from being in a quieter space, or perhaps could have focused on therapies that did not require a calm atmosphere which ultimately this gallery was unable to provide.

- There were long periods of silence during this session. Although these can be said to be in keeping with the demonstration, it was also observed that these silences may have prevented people from joining the session. A silence provides an emotional and intellectual barrier to taking part in dialogue.

Poetry reading

i.   Summary

- Patience was a particularly flexible speaker. On several occasions she asked the audience whether they would like to hear more poetry or ask questions. In this way the poetry session was in part audience led.

ii.   Recommendations

- Although this session had a more formal structure than some of the others, the seating arrangement imposed another formality that may have restricted dialogue from the audience. We should experiment with other seating arrangements (such as cushions on the floor), or with reducing seating to a bare minimum only for those who really need it.

Comments from the speakers

Following the event, a short (approx 15 minutes) telephone interview was conducted with 4 of the 8 speakers at the event. The following were the main points raised:

- Speakers fell into 2 categories in their opinion of the event's organisation. Speakers to the handling session and holistic therapies had positive reactions to the organisation, whilst those at the artist's tour made several negative comments. It was felt that the organisation was rushed and that their involvement was too last minute. Communication with the Science Museum was confused by having several points of contact within the museum. One of the speakers suggested that they need to speak to one person who has the 'master plan'.

  One of the speakers commented that all the communication was conducted by email, however this speaker does not have a computer on their desk. They would have preferred to receive a paper copy.

- 3 out of the 4 speakers contacted reacted negatively to the space itself. It was variously found to be cramped, too dark, and with too many noise interruptions. The lighting was also linked with a preconception about museums being dark, dingy places. One of the speakers however, was positive about the lighting and atmosphere within the gallery.

  It was a dark dingy corner of the museum…couldn't see the audience very well. (Speaker)

- All of the speakers were positive about their interactions with the pubic. Speakers enjoyed being able to talk directly to the public, and were surprised by the publics reactions and understanding. All of the speakers spoke to the public at some point, although this was much more frequent in the handling session and holistic therapies.

  One woman really impressed me….(Speaker)

- Interviews with the speakers showed some indicators of learning for 2 of those questioned. The informal nature of some of the sessions provided personal learning for one of the speakers. Such informality was not their usual experience of talking to the public, but their experience was positive.

  I would've liked to have given a formal presentation but it was better not to.(Speaker)

  Personal learning also occurred for a speaker on the artist's tour. By listening to the rest of the tour they discovered new factual information.

- As a miscellaneous point, one of the speakers felt that is was 'unreasonable' not to be paid for their contribution to the Science of Beauty. In this case, the speaker had also spoken previously at another Naked Science event and they felt that having been asked back, a nominal payment should have been offered. They did not feel that the offer of IMAX tickets was sufficient as recompense for their time.

Naked Science Evaluation Report

Skin Deep Circus

23 November 2002

Location: The Science Museum, Fellows Room
Speakers: Vanessa Toulmin (chair), Marissa Carnesky, Rachel Riggs, Adam Bennett.

1. Executive Summary
2. Recommendations
3. Event Format
4. Profile
5. Methodology
6. What went well
7. What could be improved
8. Did dialogue occur?

Executive Summary

- 52 people attended this event, 1/3 of whom left before the second half. Of the initial 52 people at least 35% had a connection with either the speakers or Science Museum staff

- None of the participants at this event wore a mic and speakers and performers were difficult to see. Both of these things presented physical barriers to the audience enjoying and participating in the event.

- The whole of the event was permeated by a formal atmosphere. This included the time before the event when the audience were required to wait in the foyer, during the performance, the interval, and during the discussion itself. Reasons for this may relate to the location inside the Fellows Room (a formal library setting), the seating arrangement (rows of chairs as if in a lecture), and the attitude of the panel (as an academic group). In turn, this formality presented a barrier to dialogue.

- A Dana Centre focus group of 6 people (and one person on the Friday) was brought to this event. All of these people are part of the Dana Centre core target audience (as young independent adults aged between 18 – 40). However, physical, emotional and intellectual barriers meant that none of these people contributed to the discussion. This contradicts the Dana Centre aims that, 'participants feel able and welcome to join in the debate, even if they do not have specialist knowledge' (Wellcome Trust contract section 2.3). Furthermore, most of the user group members did not enjoy the event, were not challenged by the discussion nor felt that they had gained anything from attending.

- Results of the email survey (3 respondents), speaker interviews (3 respondents) and focus group interviews show a clear division in opinions about the event. The respondents to the email questionnaire and the speakers themselves were considerably more positive than the focus group participants. As the focus group represents the core Dana target audience this suggests there was a problem of accessibility and interest at this event.

- **Puppet Show:** Visual and aural barriers were presented by the arrangement of chairs at this event. From the side and back of the room it was extremely difficult to see and hear the performance. Several members of the audience were forced to stand up.

  Members of the Dana Centre user group at this event reported that they found the puppet show to be puerile and unprofessional. As a result, there was an emotional barrier that prevented them from enjoying this half of the event. This does not mean that puppets should not be used, merely that content and presentation should be pitched at the appropriate level.

- **Discussion:** It was only at the end of the event that the discussion moved away from question and answer and towards dialogue. This occurred when one of the speakers asked how the audience felt during the puppet show. This was an open question asked directly to the audience about their emotions.

- **Combination of both halves:** It was clear from the event observation of the event as well as from the email and user group respondents that the

two halves were viewed as separate entities rather than being intrinsically linked and therefore the puppet show did not provide stimulus for discussion. A performance such as the puppet show can provide the audience with an accessible way into dialogue, however, this will not occur automatically and must be facilitated if it is to be successful.

- **Speakers:** The 3 panellists contacted after this event all stated that they had greatly enjoyed their experience of being a speaker. This includes all contact with the Science Museum before as well as during the event. Interviews conducted after the event showed that there were some indicators of learning between the speakers, which can be interpreted as a positive result. However, we should also be aware that the speakers did not give any indication of learning garnered from the audience.

- For most of the user group members, speakers were seen as academic and intimidating. Participants were afraid of saying the wrong thing and/or of being judged. This meant that they were unable to ask questions/explore issues which did interest them around the topic of 'abnormality/normality' and disability.

Recommendations

- The physical barriers of restricted sight and hearing at this event present a serious barrier to dialogue, however, these can be easily overcome. At future events, all participants (speakers and audience) must wear, or have access to a mic so that they can be heard. To prevent a visual barrier, we should experiment with circular seating arrangements or alternative seating such as cushions on the floor.

- The formalities in the structure and presentation of this event posed several emotional barriers to the audience and prevented contributions from some people (particularly those who did not know any of the speakers). To enable dialogue to develop, it is imperative that the audience feel comfortable at all times.

- Structural formalities can be overcome by moving away from the model of a traditional panel debate, and breaking down the barriers between the audience and the speakers. This might be achieved by organising a less formal seating arrangement and by briefing the panel about the kind of questions that are suitable to ask the audience. We should also experiment with alternatives to the panel debate, such as facilitated discussion in smaller groups.

- There was a very formal, hushed atmosphere before the event, when the audience were waiting in the foyer, however this would be a good time to try and break down emotional barriers before the event itself starts. As suggested by a member of the audience, music could be played and wine served from the beginning. This would serve to build up the audience's anticipation in preparation for the event, and might encourage dialogue between audience members.

- Other emotional barriers posed by the speakers themselves should be addressed if the audience are to be fully engaged in a dialogue. This might involve briefing the speakers about the kinds of questions that are likely to encourage dialogue (open questions / questions relating to emotions rather than factual knowledge), inviting speakers who do not have an

academic background or using a facilitator to start the discussion rather than relying on audience members to ask a question.

- When an event is composed of two, different halves, it needs to be clear to all participants how these relate to each other and how one should be used to feed into the other. This could be done at various stages throughout the event: A clear statement at the beginning about what the first half is about and how it relates to the second part; a statement before the second half précising the first half, the issues raised and indicating that these are what the discussion will be about; starting the second half with open questions about audiences reaction to the issues raised in the first half. Furthermore there needs to be a clear focus/central question to the event which is known to all participants. Without this, it is very hard for dialogue to progress beyond the question and answer stage.

Event Format

Skin Deep Circus took place in the Fellows Room at the Science Museum on Friday the 22nd and Saturday 23rd November 2002 (when the evaluation was undertaken). A circus tent was erected inside the Fellows Room with rows of chairs placed in front. The event consisted of 2 parts: The first was a puppet show performance by the Skin Deep theatre lasting for 35 minutes. There was then a break when the audience were offered a glass of wine. The second half of the event was a panel discussion with the audience lasting for 1 hour. Panellists included the puppeteers themselves, as-well as academic speakers in the field. In total, there were 4 members of the panel.

Profile

Prior to this event 49 tickets were ordered from the booking line, but a number of people who had not booked asked for tickets just before the event started. On the night itself 52 people attended this event, of which 35 stayed for the second half of the event. 6 (12%) members of this audience were part of a Dana Centre focus group, and a further 12 (23%) had personal or professional connections to speakers or Science Museum staff.

60% of the audience was aged between 19-40 and 40% were over 40 yrs.

14 members of the audience were asked to complete a short entrance survey before the event and 12 people accepted. Of these people, the majority had found out about the event by word of mouth (58%) with 36% specifically naming a member of the panel or Science Museum staff as their source. The second most frequent source was Time Out and the Science Museum newsletter, both of which brought in 14% of the total audience. Only 3 people (25%) responded to the email questionnaire.

Approximately 50% of the audience at this event were male and 50% were female. The ethnic background of the people surveyed was predominantly White (71%) with some Hispanic and Asian representation (14% in each case).

Methodology

Observation notes were taken during the event by Alex Burch and Brookie Fraser Jenkins. Following the event, a 15 minute telephone interview was conducted with the speakers. E-mail questionnaires were also sent out to

members of the audience after the event. Finally, members of a Dana Centre focus group were brought to this event. The focus group consisted of 7 independent adults in the 18 – 40 age category, all of whom are culturally active people with a background in the arts. This places them in the Dana Centre core target audience. Their opinions of it were discussed in depth during individual interviews, each lasting for 30 minutes.

What went well

- The puppet show was positively received with laughter and applause from the audience.

- The chair successfully kept the event to time.

- This event successfully attracted an audience with an arts background (the target audience for this event). 86% of those who completed the entrance survey were non-scientists and professions included illustrator, artist, mask and puppet maker.

- Response from email and user group respondents indicated that there were surprised to see a puppet show taking place inside the Science Museum. Preconceptions about the museum were challenged in a positive way by this.

- The speakers commented positively on the material given to them prior to the event.

  "I was very impressed with… additional material such as the website material and handouts." (Speaker)

- The speakers were very happy with their experience of taking part at this event; they enjoyed it, they felt it was well organised, it was different from the usual type of event they have been asked to participate in.

- The speakers demonstrated some indication of learning. One of the speakers commented that coming from an academic background, this event was a new and innovative experience (personal learning). Whilst for the non-academic speakers, they also commented that meeting other speakers who did have an academic background was very useful for them (cognitive learning).

  "The more we talked (with other speakers) the more I thought about the research I'd done. It was so valuable to get feedback". (Speaker)

What could be improved

- Several physical barriers seriously impacted on the audiences' experience at this event. Both the puppet show and the discussion were difficult to hear because none of the participants (speakers and audience) spoke into a mic. The audience's view of the puppet show and discussion was restricted. The room was also very dark thus further impairing vision of the puppet show.

- Although 52 people were present at the first half of the event, only 35 then stayed for the second half of the event – including the 6 members of the Dana Centre focus group.

- The event appeared to be attended by a predominantly people who were friends/colleagues of the speakers. User group respondents commented that they felt the event had an 'exclusive' feel and that they felt on the 'outside' - as if the event was not meant to be for them.

Did Dialogue Occur?

- The second half of the event never really moved away from a question and answers session towards dialogue. There were several reasons for this including physical, emotional and intellectual barriers.

- Audience members commented that there was a very formal atmosphere both before and during the event that prevented them from contributing; an emotional barrier to participation

- User group and email questionnaire respondents felt that the panel did not recognise points raised by the audience, they were not prepared to listen to them and ignored issues raised if they weren't on the panel's agenda. This created a serious barrier to contributing – why contribute if you feel that what you are going to say will not be treated with respect?

    "… there were some things I wanted to say but it wasn't allowed, she only answered questions she liked".

- Some of the respondents felt that the panel were intimidating. This presented an emotional barrier to audience members contributing their point of view.

- A further emotional and intellectual barrier was raised by the topic of the discussion. Some of the respondents felt that they did not possess the correct language to talk about issues of abnormality and disability, and did not want to use 'incorrect' terms for fear of being corrected and judged by the panel.

- There was no central question/issue to discuss – in this situation the audience tends to ask a series of unrelated questions rather than focussing on exploring a central argument in greater depth.

- Although there were some indicators of dialogue (such as statements of belief and rhetorical questions) these were few and far between. The majority of questions raised by the audience were factual and cannot therefore, be considered as dialogue.

- Although the chair involved other members of the panel when answering a question, there was less interaction with other members of the audience.

- For several of the user group members, the event did not present anything that they had not already thought and talked about in their own peer group. They were not challenged by the issues raised, although they would have liked to have pushed the boundaries more.

    "I felt they weren't giving you anything you didn't already know, nothing you wouldn't have already thought of. No depth to what they were saying, pretending you couldn't know these things – patronising"

Naked Science Evaluation Report
An Injection of Sanity? A Debate About MMR

February 2003

Alex Burch

Recommendations

- There were practical difficulties with staffing and the space on the evening of the event. We may need to consider having a delegated member of staff to check that action sheets have been read and acted on. Whilst this may appear to add unnecessary work, it will reduce what we have to do on the evening of an event.

- At future events we need to carefully consider who the niche target audience should be. Whilst the presence of healthcare professionals in the audience helped to provide additional information in the dialogue, several email respondents felt that the presence of GP's was overpowering and questioned who the event was actually aimed at. Ultimately the identification of a niche audience needs to be considered together with the aims and objectives for the event; what motivates parents maybe very different from what motivates healthcare professionals.

- It needs to be clear when the actual event is going to start. At this event, the discussion didn't start until 7.20, however on the flyer the event was advertised to start at 6.30 – several people rushed for 6.30 and then were disappointed that they had to wait for a further 50 minutes.

- We must effectively brief speakers as to what is expected of them. Speakers must use the microphones, they must stand when they speak so that they can be seen. We should request that they use powerpoint presentations – OHP presentations look unprofessional and are hard to see.

- We need to be certain of our aims and objectives and what we want people to get out of the event. To this end we should try and brief each speaker as to who the other speakers are and roughly what we have asked them to speak about. We should also set the speaking order.

- At live events which cover controversial issues there may be controversial/emotional/defamatory/potentially slanderous comments. We need to consider the legal implications of this: Are we responsible if this happens, do we need to display disclaimers at the event, do we need a statement we can quote if someone says something defamatory?

- We need to consider the role of Science Museum speakers. As representatives of the Museum they may not be able to give opinions for or against an issue but they can be there as information providers. Their position must then be made clear to the audience.

Event Format

The event was held in the evening in the Antenna space next to the MMR exhibition. Attendees were allowed up to 50 minutes to look around the exhibition before the event started. The event took the form of a panel debate and lasted 1hr 50 mins. The audience and speakers were then invited for wine in the Deep Blue Café.

Methodology

A brief questionnaire was conducted with audience members prior to the start of the event to establish the audience profile. Audience members were also recruited to take part in an email questionnaire, sent out 1 week later. 18/29 (62%) respondents replied to the email questionnaire. Three out of the four speakers were also contacted and an email questionnaire completed by them. In addition detailed observation of the event was undertaken and indepth interviews with three members of the audience were conducted immediately after the event.

Audience Profile

- There were 115 available places at the event, all of which were booked prior to the event. On the evening, 89 (77%) turned up. It should be noted that South Kensington station was closed temporarily on the evening.

- The entrance survey indicated that approximately 50% of the audience were healthcare professionals (e.g. GP's/Nurses/researchers) or people with a professional interest in this issue (e.g. SEN teachers/autism charity manager).

- Approximately 70% of the audience were female. Around 50% of the audience fell into the 19-35 yrs age category, 40% in the 36-50 and 10% into the 51 years and above.

- People found out about the event from a variety of sources

Where Attendees Heard About The Event From	No.
Professional contact (contributed to MMR exhibition/SM contact/from involved professional organisation.	9 (32%)
Science Museum website	6 (21%)
Word of Mouth	5 (18%)
Parenting magazine	4 (14%)
Time Out	3 (11%)
Science Museum MMR exhibition	1 (4%)

- Of those that responded to the email questionnaire, just over 50% had visited the Science Museum in the last 5 years, but none of the respondents had ever been to a Naked Science event before.

What worked well

- The space worked well for the audience. It was a good space to use for a panel discussion. The presence of the MMR exhibition was something people liked. Before the event, the majority of the audience looked at the exhibition, many of these spent a long time at the terminals and were obviously reading the information. In addition, the exhibition was mentioned by several email respondents as something that they specifically liked.

The exhibition beforehand really helped to get into the frame of mind for discussion"

- The audience were interested in what other members of the audience had to say. 92% of the email respondents agreed with the statement "I was interested in hearing what other members of the audience had to say". This was further reflected in the comments to the email questionnaire.

  "Good, well informed audience".

- Only 6 people left during the event (most of these left after the panel discussion). In total 85% of the audience stayed for drinks after the event.

- After the event, there was a lot of dialogue between people. We observed members of the audience being approached by other members of the audience and the speakers with offers of information provision, addresses of relevant organisations and to challenge/probe further what they had said. This extended the debate. This was also evidence of affective learning.

- The three contacted speakers found it interesting to listen to and talk to the audience.

What could be improved

- The In Future games had not been turned off initially and were an aural distraction

- Whilst the space worked well for the audience it was difficult space for Museum staff to operate in. The PA system was fitted behind in the Antenna cube behind the speakers thus making it hard for the operator to see speakers and therefore control sound levels.

- The speakers were hard to see. The low lightening levels, the placement of speakers on the same level as the audience and the failure of several speakers to stand when speaking made them difficult to see.

- It was difficult to see speaker's visuals. The OHP screen was not positioned high enough for people to see, with several people at the back of the room standing to see the presentations. Several speakers' OHP's were hard to see because hand written rather than printed.

- Several email respondents commented on these physical barriers at the event and this obviously had a detrimental affect on their enjoyment and participation.

  "…difficult to hear especially initially with the background noise from other exhibits and difficult to see OHPs. The photographers stood in the way".

- The majority of the email respondents felt that the Chair was biased – this had a negative affect on their view of the event.

  "Poor chair – biased, unprofessional and ill-informed. In order to have a good debate the chair is key. It is good to try to trigger reactions, but silencing the opinions he did not favour was poor".

- One of the speakers felt that the panel was biased with three pro-vaccine speakers and one neutral speaker. This was felt to create a feeling of them and us between the speakers and the audience.

- The lack of representation on the panel of someone who was anti-vaccine meant that some

Dialogue

- There was some evidence for dialogue occurring at this event.

- The external distractions and poor visuals were physical barriers to dialogue.

- The lack of involvement of the audience until after all presentations was also a barrier. Although each speaker was asked to prepare a question to give to the audience, these weren't used. As a result the audience did not get involved in the dialogue until after all the presentations had been given (50 minutes into the event).

- 18 people asked questions, of which at least 6 were scientists. Furthermore two GP's dominated the debate. Whilst they were able to provide additional information they appeared to talk from a different knowledge base than the parents in the audience who appeared to be asking for information about whether their children should be vaccinated or not.

- Contributions from the floor were a mix of requests for information, challenges to the panel and statements of belief.

- There was some evidence that sections of the audience became emotionally involved during the audience discussion with members of the audience clapping, nodding/shaking their heads or commenting on contributions. However, there was little evidence of emotional involvement during the panel's presentations.

- At several points the Chair developed a dialogue with one of the speakers. This is against the aims of the event (dialogue between speakers and audience/amongst audience).

Naked Science Evaluation Report

Animal vs. Human experimentation: Which do we value more?

5 February 2003

Location: Science Museum, Fellows Room
Duration: 3 hours (including extra time at start and finish)
Observed by: Claire Tomkin and Brookie Fraser Jenkins
Chair: Wendy Stainton-Rogers
Speakers: Colin Blakemore, Julian Svalescu, David Thomas, John Haldane

There were also 4 facilitators from the Open University at this event.

1. Event format

2. Methodology

3. Profile

4. Recommendations

5. What went well

6. What could be improved

Recommendations

This event structure worked well, engendering dialogue and learning for the speakers and audience members. Lessons can be learnt from this experience and transferred to future events, where we must consider how this structure could work successfully in the Dana Centre. Some elements can be improved, and other aspects can be capitalised on to maximise the potential of this format.

- Facilitators and speakers must be thoroughly briefed about Dana aims and objectives before the event. This should include information about why the event is structured and timed in such a way, and what we want all participants (audience and speakers) to gain from this. The purpose of this part of their briefing is to ensure that they do not react negatively when asked to perform differently to the way in which they are accustomed.

- The three speakers and facilitators who responded all felt that there was not enough time for discussion. This referred to their presentations, the group discussions and the plenary discussion at the end. In future, we could experiment with **fewer speakers** thus allowing for longer discussions at each level of the event. However it should be noted that the event did last for a total of 3 hours; it would be unreasonable to extend events beyond this timeframe.

- Focus group members and speakers felt that they wanted more discussion at this event. To enable protracted discussion of the issues raised, we must explore ways of extending the debate, for example, by the use of Web dialogue. To ensure that these facilities are then exploited by the audience and speakers, their profile must be raised by promotion during the live event itself.

- All speakers must wear a mic at any point when the whole audience is gathered together during an event. If people cannot hear there can be no dialogue.

- It was very difficult to see facilitator's presentations displayed on flip charts at the end of the event. To prevent the physical barrier of restricted vision, new methods of displaying information need to be found. In future events we could experiment with inputting directly into a data projector that can display the information on a large screen.

- When the speakers are interacting informally with the audience it would be helpful for them to wear a name tag for easy identification.

- Staff numbers should be minimised to prevent intimidating the audience.

- The time commitment for each event must be clearly advertised on the flyer so that audience members know when the event is going to finish.

- When an event is anticipated to be long (over 2 hours) we should experiment with bringing forward the start time by reducing the gap between doors opening and event starting.

Event format

Animal Experimentation used an experimental structure to depart from the traditional panel debate. Doors to the event opened at 19.00 and the event itself

started at 19.30. After initial brief introduction and position statements from the speakers, the audience divided up into 4 groups of 10-13 people. Each of these small groups met around a table, and was hosted by a facilitator from the Open University. Each speaker joined each group for 15 minutes. Wine was served throughout the small group discussions. After this time the audience reformed as a whole. Facilitators gave a summary of the discussion that had taken place in their group, and a vote was then conducted with the whole audience. Proceedings were drawn to a close at 21.40 and remaining members of the audience finally left at 22.00.

Methodology

Observation notes were taken during this event and a profile of the audience was collected at the entrance. 6 members of a focus group of local science students attended this event and were interviewed afterwards. This has provided detailed information that can be found in the relevant report. The 4 speakers and the 4 facilitators at this event were contacted afterwards and asked to complete an email questionnaire. In total, 3 out of the 8 responded.

Profile

A short profile questionnaire was conducted at the entrance to this event. A total of 28 people, representing 58% of the total audience, were questioned and the following information gathered:

- 82% of the audience were estimated to be in the age range 19 – 35. This is within the target audience of 18 – 40.
- There was a fairly even gender split at this event. 54% of those questioned were female and 46% were male.
- The ethnicity of the audience was predominantly White (68%). The second largest ethnic group was Asian (25%).
- Participants found out about the event from a variety of sources, the largest of which was by word of mouth at 39%. An email from the BA had alerted 29% and Time Out brought 11% of those questioned.

What went well

NB. The following are based on observation of 2 out of the 4 audience groups at this event.

- The results of the voting at this event were very positive:
    - 7 people said their views had been altered
    - 29 people said their views had been challenged but not altered
    - 6 people said their views had not been challenged

    It is significant that 7 people – 17% - felt that their views had been altered. This constitutes a move towards an investment in social capital, created directly by this event

- At least 2 out of the 6 members of the focus group continued discussing the issues covered by the event after they had left the building. This gives an indication of a longer lasting affect provided by the event.

- Focus group members said that they wanted longer time to discuss the issues raised by the event. This can be taken as a positive indication that the audience were engaged and inspired. Several people were surprised

when they were told that the event lasted for 3 hours; they had felt that it had lasted for much less time.

- There was strong evidence for learning in the focus group members. This learning was both cognitive (they had gained new information about the issue) and affective (they had learned about their own and others' stance on the issue)

   Its personally relevant because of my subject… It means I have to think about what this means to other people.
      (Focus group participant)

- 2 of the 3 responses to the email questionnaire from speakers and facilitators displayed evidence of learning. The learning is both affective and cognitive:

   I learnt more about issues surrounding embryo research and the different ways in which people approach moral issues
      (Speaker)

- Focus group members praised the discussion groups which they felt enabled them to speak more freely than a traditional panel discussion. All members of the focus groups contributed to this part of the event, and felt that they had gained something in return. Although they were surprised that the event took this format, they stated clearly that this surprise was a positive change.

- In the 2 groups observed, all but one member of the audience joined in the discussion, and most members of the audience made many contributions to discussion.

- Contributions covered a mixture of rhetorical, exploratory, factual and challenging assertions.

- Audience members appeared to achieve parity with the speakers, and with each other. All contributions were listened to respectfully, whilst people were not shy of interrupting when they felt strongly.

- Discussion flowed freely throughout the event. Once the facilitator had initiated discussion in the small groups there was no need to prompt or intervene further.

- Background noise at this event came from the other groups in discussion. Contrary to proving a distraction however, this noise can be seen as creating a positive and relaxed atmosphere.

- Audience members appeared to understand the structure of the evening and moved quickly into and out of small groups.

- The event started and finished at the planned times.

What could be improved

NB. The following are based on observation of 2 out of the 4 audience groups at this event.

- One member of the audience left before the event had started. When questioned, he said that he felt intimidated. It is possible that such a large staff and security presence presented an immediate barrier to some members of the audience.

- When the audience were gathered together as a whole it became difficult to hear the speakers because they did not wear a mic. This presents a physical barrier to participation at certain times during the event.

- The use of a flip chart at the start and end of the event hindered the view of the information displayed. From the back of the room the chart was too far away to see.

- The speakers were not clearly introduced by name at the start of this event or at any time after this. When a speaker joined a table, it was unclear who they were.

- By the end of the event there were approximately 35 members of the audience still attending. 6 of these were recruited members of a focus group. It is possible that audience members felt the event was too long, or based on the comments of one person, the audience were not aware of what time the event was finishing and had made prior commitments.

Naked Science Evaluation Report
Motherland

February 2003

Date: 11/02/03
Time: 7pm – 9.30pm
Venue: The lecture theatre at the Science Museum

Recommendations

- This audience is likely to bring children along to events even if it has been explicitly stated that they are aimed at adults. This must be taken into account in the planning of events; how will they be catered for, would this be a problem in a licensed venue?

- We need to build on the success of this event of bringing in a new audience to the Museum. This could be done both through the continuing provision of events tackling issues of specific interest to this community and by marketing to this audience for events which do not have a specific niche target audience.

- The 'Kilroy' format worked well with this audience and this issue. We should experiment further with this format to see whether it would work equally well with an audience that had less vested interest in an issue. We should also consider ways in which we can adapt this format so that it can be successfully used in the Dana building.

- With this type of format it must be clear whose responsibility it is to select members of the audience to speak. It was unclear at this event whether this responsibility lay with the 'chair' or the Museum staff, this led to some frustration and negative reactions amongst parts of the audience.

- Events need to have a clear starting point. To ensure there is no confusion, we could experiment with using music and lighting to denote the prelude to an event, and the point at which this ends.

Event format

The event trailed a brand new format for dialogue. This was the 'Kilroy' format; there were no panellists and all invited guests sat amongst members of the audience. The 'chair' acted as a facilitator and asked open questions of the audience. The 'chair' and two Museum staff used roving microphones to field questions and comments from the audience.

A 20 minute clip of an upcoming BBC film was shown as stimulus material at the beginning of the event. The 'chair' then asked a series of questions to establish who was in the audience. The audience discussion lasted for 1 hr 15 minutes. Afterwards, participants were invited to stay for a drink and continued talking for a further 45 minutes within the same event format.

Audience Profile

133 people booked this event, of which 112 people actually attended. Of these 112 attendees, 17 (15%) were people who had taken part in the Motherland survey, including the 3 main contributors featured in the BBC film. Many of these had brought friends and relatives with them. A further six people (5%) were involved in the making of the film. Five members of the audience identified themselves as scientists who had not worked on the film.

The majority of the audience (90%) were from the Afro-Caribbean community. This contrasts strongly with the general Museum profile where only 1.8% are from this community. Approximately 60% of the audience were female.

Approximately 40% of the audience were in the 19-35 yrs age category, a further 40% were aged 36-59, 10% were 60+ and 10% were aged 18 and under.

What worked well

- The 'Kilroy' format worked well. It allowed a large section (30%) of the audience to have their say about an issue which was personally relevant to many.

- The film provided a suitable stimulus for the ensuing discussion.

- The initial establishment of who was in the audience worked well. The 'chair' asked people who had taken part in the survey, scientists and the program members to identify themselves. This allowed the chair to identify people who could provide answers/comments on other members of the audience questions/statements. This facilitated dialogue between members of the audience.

- This event was successful in getting in to the Science Museum an audience that is underrepresented in the Museum general audience profile.

- Only 10 members of the audience left at the break.

- People appeared to feel very comfortable about getting up for drinks and continuing the conversation.

- There was evidence for learning including cognitive (acquisition of new knowledge/reinforcement of prior knowledge), affective (challenging beliefs and values/increased appreciation of range of view-points in other people) and personal (increased self-confidence and self-efficacy/motivation to investigate further). This was seen through the types of requests for information, the statements of belief and the exploratory comments made to other participants that were recorded at this event.

What needs to be improved?

- The air conditioning failed in the lecture theatre. This made it a physically uncomfortable environment to be in and had a negative impact on the event.

- The starting point of this event was unclear. Audience members initially expected it to begin as soon as Science Museum staff made an appearance (but were not ready). However, when the real start was announced, Museum staff had difficulty getting the audience's attention.

- It was unclear who was selecting members of the audience to speak; was it the 'chair' or was it the Museum members with the microphone. This resulted in several people who wanted to be heard not being given an opportunity to speak eventhough there was someone with a microphone sitting next to them. This appeared to create a very negative impression not only on the person wanting to speak but also on the people around them

<u>Dialogue</u>

- Dialogue did occur at this event.

- Approximately 30% of the audience contributed directly to the discussion either by asking a question, making a statement or by providing an answer. These included 'members of the public' as well as the three main volunteers, other volunteers, programme makers and identified scientists.

- The rest of the audience often supported individual speakers by nodding their heads, shouting agreement or clapping when a point had been made.

- The dialogue was comprised of requests for factual information and requests for help (how could they investigate further/how could they change things) that were answered by other audience members. Many contributions were challenging/exploratory or rhetorical in nature. A number of participants made affirmative statements; thanking the programme makers and volunteers for highlighting/showing/taking part in an issue that was important to the community.

- *"I would like to thank the contributors who are all due our thanks for their courage and honesty"*

- Participants often used emotional language and introduced their personal experiences.

- There were large sections of the dialogue which flowed without any prompting or intervention by the 'chair'.

- The dialogue tackled the main themes that the film illustrated but was flexible enough to allow audience members to pick up entirely different points and introduce them.

- The majority of people stayed until the end of the event. During the drinks people chatted to each other. Some members of the audience appeared to speak to people they did not previously know.

Naked Science Event Evaluation Report

Stressed Out!

1 March 2003

Duration: 3 hours (drop in)
Location: Who Am I?
Speakers: June Sarpong, Samaritans, Alice Nicholls

Recommendations

- When collaborating with other organisations we must ensure that our own agenda does not get overlooked. We must be sure of our aims and communicate these clearly to our collaborators at all times. Equally, we must understand the aims of the collaborating parties and ensure that these are in harmony with our own.

- Although the celebrity presence at this event encouraged visitors to stay after the prize giving had finished, it was not used to draw attention to the other sections of this event. In the future, we should not be shy of exploiting a celebrity presence for our benefit. For example, June Sarpong could have been asked to take part in the other sections of this event.

- As a subject matter the audience found it easy to talk about stress. However, as we did not provide a controversial angle on stress at any section of this event, there was a barrier to discussion for the target audience. In the future, we must ensure that we present a challenging angle for the audience to facilitate their engagement in discussion.

- The separate elements of this event were too discreet. We must make it clear to the audience what is available at an event, and why this is different from what is available at other times. For example, one person did not know that the object handling was a special event. It is important to raise the profile of any special events within a gallery.

- Shortly preceding the event, it became clear that some of the intended material could not be displayed due to software incompatibilities. In the future, we must ensure that there is enough time to conduct a test run of all electronic material and to make changes if necessary.

- On this occasion, we were aware that there was a likelihood of attracting a family audience who sit outside our target audience of independent adults. In this case, we would have benefited from providing a way into our event aims for this secondary group. For example, how can a family group be encouraged to discuss the controversial angles of stress? Alternatively, where there is a high risk of attracting a secondary audience some fundamental aspects of the event should be altered to eliminate this risk. This might include the angle taken on the subject matter, the location, or the timing of the event.

Event format

This event comprised of 4 sections:
- Presentation / Prize-giving
- Handling session with objects from the Museum's collection
- Feedback wall for members of the public
- Trail of Museum's objects in the 'Who Am I?' gallery

The presentation was hosted by June Sarpong (Channel 4 children's presenter) and began at 13.00. This section finished at 13.45 and the remaining sections ran simultaneously until 15.00. The handling session was hosted by Alice Nicholls (Science Museum curator).

Methodology

Observation notes were taken throughout this event. In-depth interviews lasting for 10 - 15 minutes each were conducted with 4 members of the audience during the event. Following the event, an interview was conducted with one of the speakers. Finally, the comments posted on the feedback wall were kept and analysed after the event.

Profile

The following information is based on a visual estimation of the 27 people who attended the presentation and prize-giving at this event:
• 50% male / 50% female.
• 37% aged between 18 – 35 yrs
• 19% under 14yrs
• 100% White in ethnic origin

What could be improved

- Staff members were frequently asked 'where is the Stress event'. This indicates a fundamental physical barrier. The location and format was unclear for visitors in the gallery. Although they knew something was going on, they didn't know what or where. Obviously, people cannot become involved if they are not sure that they are attending the event. One person said they thought that the handling session was " just another display" (Stress event interviewee)

- Physical barriers prevented audience involvement in the presentation and prize giving.
    o The space was not large enough for all the visitors to have a seat. This resulted in people standing at the back, just outside of the Live Science area.
    o Two of the competition entries were poems. These were displayed on an overhead projector, however the writing of the poems was too small to see.

- Audience members were not aware of the different parts of the event. Of the 4 people questioned, only 1 was able to mention more than one section of this event.

- This event attracted an audience who were not part of the event target audience – i.e. families. This may have been because families were already in the gallery at this time on the weekend, or because the subject matter was appealing to them.

- Of the 4 audience members questioned about the event, none of them thought that it was controversial, provoking, topical or challenging.

- There was little dialogue at any section of this event. The audience's engagement with the material remained on a very superficial level.

- Only 1 out of the 4 people questioned showed evidence of learning from this event.

- A number of issues relating to collaboration were raised by this event:

- The Samaritans wanted to pack up immediately following the presentation section of the event, however the other parts of this event were scheduled to continue until 15.00
- In meetings preceding the event the Samaritans had expressed a reluctance to embrace the controversial side of Stress. From previous evaluation however, we know that this lack of controversy presents the audience with a barrier to engagement.
- One of the displays provided by the Samaritans did not work on the day. This could've been avoided had we received the material at an earlier date.

What went well

- Using a microphone attracted people off the gallery and into the presentation area.

- The use of a narrow space to house the feedback wall appeared to attract visitor's attention. As people walked through this area, they paused to consider the intervention of the post-it notes. It should be noted that the gallery was not busy on this day, and the implications of using a corridor space are likely to differ with a larger number of visitors present.

- Audience members appeared to enjoy being able to read other visitor's comments on the feedback wall.

  It was interesting to see that other people think the same as us. We're all in the same boat.   (Stress event interviewee)

- Audience members enjoyed leaving comments on the feedback wall, and based on observation people found it easy to use the post-it notes. This may be because post-its are familiar and not intimidating to visitors. The use of low tech material was appropriate to this activity where people were encouraged to overcome their emotional barriers to displaying personal thoughts.

  It was good because you can write something quickly then look away (Stress event interviewee)

Speaker Interview

A 20 minutes in-depth interview with the speaker who conducted the handling session raised the following points:

- Objects that are presented under a cover and not made available for the audience to touch, do not provoke dialogue.

- The audience found it difficult to regard familiar objects (such as lavender oil and massage balls) as forming part of the Museum's collection. As a result, they were less able to engage with these objects than with other, more unusual objects.

- The object that worked best at provoking discussion was the Violet Ray Kit. From experience of other handling sessions, this object is known to be well received by all audiences. Reasons for this appear to be that the

object is unusual, but not totally outside of the audience's sphere of knowledge.

When probed they could come up with what it (the Violet Ray Kit) was doing…But its unusual enough that they don't know straight away what it is. Its just great!

(*Stressed Out!* Speaker)

- This event attracted a family audience, which was not part of the target audience for this event. As a result, some of the objects on display were not appropriate for discussion with the audience who were present at this event.

Its very difficult explaining those objects to anyone under the age of 14. They don't understand Stress.

(*Stressed Out!* Speaker)

Feedback Wall

Throughout this event, audience members were asked to write their comments about stress on a post-it note, and fix it to the wall for others to read. A total of 97 comments were gathered.

- Of the 97comments gathered, 41% were from children under the age of 14 who do not form part of the target audience for this event. Of the remaining 57 comments, 14% were spoilt and 18% appeared to be written in jest.

- None of the comments stated an overt link to material in the gallery or on display during the event.

- None of the comments written about stress were made in response to another statement on the wall. Despite this, visitors said that they enjoyed reading the comments left by other people. This suggests that although the concept of reading other visitor's comments is interesting to this audience, there were barriers preventing the audience from engaging in discussion.

- Very few of the comments left by visitors can be interpreted as controversial according to the description of controversy that has been formed by Deborah White (see appendix F above) that focuses on elements of ethics, risk, relevance, topicality and newsworthiness.

The following represent a selection of comments left by visitors on the feedback wall at this event:

- *Being stuck in traffic when you are already late*

- *Trying to amuse children in the school holidays really stresses me out!*

- *Work!! (exams)*

- *Acupuncture killed my pain in my shoulder within 10 minutes*

- *Exercise. Music.*

- *Vodka!*

Naked Science Evaluation Report
Faltered States

21 March 2003

Event: Faltered States

Location: Lecture Theatre, Science Museum

Observed by: Brookie Fraser Jenkins

Speakers: Matt Fraser, Rachel Pendragon, Ju90, Patience Agubabi, Jahred Louche (facilitator)

Object handling staff: Deborah White, Ben Gammon.

1. Executive Summary
2. Event Format
3. Recommendations
4. What went well
5. What could be improved
6. Profile
7. Methodology

Executive Summary

- This event successfully attracted an arts based audience into the Science Museum.
- The audience were very interested in the museum's collection and keen to see our objects. However, we did not take advantage of this interest and there was not enough time for the audience to explore the objects. In future events, we must be sure to build in sufficient time for the audience to view what is on display at the event, and actively encourage them to do so.
- The audience faced emotional barriers to contributing at this event. To overcome these we should experiment a number of options:
    - Trial event formats that are not based around the panel debate.
    - Thoroughly brief the facilitator and provide them with guidance as to the kind of questions that we believe will engender dialogue at our events.
    - Ensure that we create a relaxed atmosphere at the start of the event.
    - Ensure that the event marketing material is an accurate reflection of the event' s content.
- Some audience members reacted negatively to the perceived lack of science content. In future, we should not be shy of using science content and our reputation as a science institution to engage the audience in discussion. This should apply even when the target audience has a background in the arts.
- The audience enjoyed the opportunity for informal discussion with the speakers at the end of the event. However, in this case there was only a limited amount of time for this section of the event. In future, we must make sure to timetable for informal discussion, and that the speakers and audience are invited to take part in this.

Recommendations

- The audience were able to come into the Lecture Theatre up to 30 minutes before the start of this event. In the future, this time would be a very useful period during which to set up a positive **atmosphere** for the audience. For example, during this time we could encourage the audience to explore the handling collection with the intention of inspiring curiosity and providing some basic information about the issues that were to follow. This is a period in which the audience may start to form ideas and questions that will be used in discussion later on. Furthermore, a relaxed and informal atmosphere at the start of the event may have broken down some of the emotional barriers to contributing that prevented some audience members from participating at a later stage.

- One of the respondents to the email questionnaire expressed a strong disappointment that the event did not have enough science content. They felt that this was in contrast to the marketing about the event. In future, we must make sure that all marketing material is an accurate reflection of the content of the event. This will ensure that there is not a mis-match between the audience's expectations and the reality of the event.

- The second half of this event was given over to discussion. However, several barriers to dialogue prevented the discussion from successfully getting off the ground. In the future we must make definite plans that

will facilitate dialogue. This might include asking the audience open questions, using objects from the collection to stimulate discussion, and most importantly, not allowing the discussion to turn into a panel debate.

- In this event, the seating arrangement during the second half of the event took the form of a panel debate. However past experience has shown that dialogue is most successful in this lecture theatre environment when the 'experts' are spread out amongst the audience. Alternatively, respondents to the email questionnaire stated that they felt most comfortable when they were able to informally approach the speakers at the end of this event. In future events we should take advantage of this by allowing more time for informal dialogue with the speakers. This might be another way in which to overcome some of the barriers presented by the formalised seating arrangement of a lecture theatre.

- Usage of film at this event made a positive contribution to the performances. Future events should continue, and even expand upon this facility.

Event Format

This event took place in the Science Museum's lecture theatre. Visitors arrived from 19.30 and the event started at 20.00. Object handling tables were on display throughout this event although they were only staffed at the end of the event. Initial presentations by each of the 4 speakers and the 'MC' lasted for a total of 1 hour 15 minutes, finishing at 21.15 and made use of graphic displays. A short break followed the presentations. At this time, chairs were set out at the front of the theatre for the speakers. During the second half of the evening, the facilitator took questions from the audience. The event finished at 21.50.

What went well

- This event was successful in attracting a new audience for the Science Museum. The audience profile showed that a 44% of those questioned came from an arts based profession/background.

- This event was successful in informing the audience about the Science Museum's collection at Blyth House. During the event, a number of audience members asked specific questions about how they could access the collection and this was once again reflected in the email questionnaire sent out after the event.

- There was some evidence of learning at this event. Some respondents to the questionnaire were surprised that the Science Museum hosted such a creative event, whilst others found the event to be inspiring *I found the event to be very stimulating and creative and inspiring.* (Email questionnaire respondent) and one person displayed evidence of cognitive learning. *I didn't know that children affected by thalidomide were forced to use strange contraptions.* (Email questionnaire respondent)

- This event made good use of technologies to project images that successfully enhanced the performances. This included footage shot especially for this event that had been taken inside Blyth House.

What could be improved

- The speakers at this event appeared confused about how to use the microphones during the second half of this event. It is important that all speakers are thoroughly briefed about the equipment, and how they are expected use it.

- There were some barriers to discussion at this event. Respondents to the email questionnaire stated that they had felt too shy to contribute to the discussion, which indicates an **emotional barrier** – even though they were interested in the issues concerned.

  I was too shy to ask questions in the question-asking forum and would have liked to talk to the speakers at the end, but there wasn't time for that.
  (Email questionnaire respondent)

- The second half of this event took the form of a panel debate. Previous experience has shown that this is not a successful way for dialogue to occur. In this case, dialogue will not be automatically generated even when the means of information provision is unusual (in this case a performance). Both observation at the event and questionnaires received afterwards indicate that the panel discussion at this event presented the audience with significant emotional barriers to contributing.

- One respondent out of 8 to the email questionnaire expressed a very clear disappointment at the lack of science in this event, and the resulting mis-match between the expectations and the reality of the event.

  The advance promo material didn't reflect the event accurately. It was more of poetry reading than a science talk. … There was NOTHING science-ish about it.
  (Email questionnaire respondent)

- Although part of the Naked Science target audience is described as "non-science specialist" this does not mean that we should abandon all science content. As a science institution, we should take advantage of our reputation as a reliable source of scientific information. Another respondent suggested that it would have been pleasing to see somebody who was not an artist in the panel. In the past, groups have expressed an expectation that the Science Museum should provide access to scientists themselves.

  Maybe include alongside the artists someone working in the field of prosthetics in order to spice up the discussion.
     (Email questionnaire respondent)

- Respondents to the email questionnaire were clear that they enjoyed hearing what other members of the audience had to say. Past experience has shown that we know this to be true of other events too. During this event we did not capitalise on this common event characteristic.

- There was a gap of 30 minutes between when the audience began to arrive at this event, and when the performance began. However, time at this event was limited. It is important that every part of an event is used

for a purpose, for example, creating an atmosphere or allowing access to collections / speakers.

- Furthermore, when time was provided at the end of the event, the audience appeared to take a great interest in the handling collection that had been on display throughout. However as this only occurred at the end of the event, there was not enough time for the audience to thoroughly explore the material available.

  I would have liked to have seen more of the Science Museum's objects that the poets had had access to.
  (Email questionnaire respondent)

- One of the speakers at this event was difficult to hear. This seemed to occur because of technical difficulties.

Profile
In total, 90 people attended this event. The following percentages are taken from the sample of 28 visitors (31%) who were questioned at the entrance to this event.

- Visitors found out about the event from a variety of sources. The largest of these was by word of mouth (32%). Other significant sources were the Naked Science mailing list (14%), Time Out (11%), Battersea Arts Centre (11%) and a flyer found at the Jarwood Scupture Prize (11%). The number of arts based sources was clearly significant at this event.

- The ethnicity of the audience was predominantly white at 89%. Only 4% of the audience were Asian and 4% were Hispanic.

- The gender divide was 25% male and 71% female.

- 79% of the audience were in the target age range of 19 – 35 whilst the remaining 18% were aged 36 – 50.

Methodology
Detailed observation notes were taken at this event. 28 people or 31% of the visitors at this event were questioned as part of a short audience profile conducted at the entrance. Out of a total of 23 visitors contacted with an email questionnaire following the event, 7 or 30% responded.

Naked Science event evaluation report

Future Foods: A Dramatic Debate

23 June 2003

Event Title: Future Foods: A Dramatic Debate
Time: 19.30 – 21.00
Location: The Columbia Bar, Aldwych
Speakers: Kandu Arts, Jo Miller and 4 invited guests

1. Recommendations

2. Event format

3. What went well

4. What could be improved

5. Profile

6. Methodology

Recommendations

- We should continue to use forum theatre as an event format in the Dana Centre. It provided successful audience led dialogue at this event.

- The Science Museum should continue to provide detailed information and advice for collaborative parties, taking the lead with our agenda and experience. This event successfully built on the knowledge garnered from evaluation of a previous event on the same subject. Many of the points raised in the first performance were successfully addressed for this event. As a result, the audience were able to quickly engage in debate, and the actors brought in varied angles and opinions on the use of GM food.

- Event marketing and planning must take account of the target audience for each event. In this case, the audience were very knowledgeable about GM foods, but this did not match the target audience of non-specialist adults. The performance itself seemed to be pitched at an audience with a lower understanding of the issues concerned.

- We must ensure that the performance is pitched at the right level for the target audience's understanding. This means that the content needs to provide the right level of factual information, or thoroughly explore the emotional issues that surround a topic so that the target audience can successfully engage in discussion.

- We should continue to use 'invited guests' as informal speakers at events. This provided an information source for the audience that was lacking from the performance itself, but did not dominate the event.

- At times during the event there was a formal atmosphere that may have provided some emotional barriers to engagement. In future events we must provide an atmosphere that is relaxed and as natural as possible for the audience to facilitate their engagement.

- We must use microphones for participants during all events. This prevents basic physical barriers that risk isolating the audience and not allowing them to engage in debate.

Event format

This event use forum theatre to engage the audience in discussion. To start the event, actors performed 2 short scenarios about GM foods. The facilitator then explained that the scenarios would be run again, and the audience were invited to call a break in the performance at any time. This break could be used to raise a point relating to the issues that the actors were discussing. Also present at this event were 4 invited guests who have expertise in the field of GM foods. These 'experts' were invited to join in the discussion, but were asked not to dominate the session.

What went well

- The audience quickly understood the way that forum theatre works and correctly used this format to engage in debate. This is particularly successful when, due to a vote taken by the actors, we know that none of the audience had experienced forum theatre before.
- The audience appeared to enjoy the format presented by forum theatre. This was frequently seen to provide welcome relief during what was an intense debate. It was clear that participants enjoyed the humour of the performance.
- Having invited guests in the audience proved to a highly successful mechanism for providing the audience with information and informed opinion.
- The audience achieved parity with the 'experts' and were comfortable with engaging them in debate.
- Dialogue did occur throughout this event, and the audience were still engaged in debate at the end of the event. Many people carried on discussing the issues even after the event had officially finished.
- This event was successfully audience led, in accordance with Dana Centre aims. This occurred throughout the event as the format of forum theatre is in itself audience led. Audience members were in control of what was debated, and who was being addressed.

What could be improved

- There were physical barriers to participation at this event. At times, it was not possible to hear some of the participants. There were no microphones used during this event. The space itself also presented a visual barrier to those audience members who were not in the bar's central area.
- The atmosphere at this event was rather formal, despite the location in a central London pub. This may have presented the audience with some emotional barriers to participation.
- Although the performances were well received by the audience, it is also true that they were pitched at a simpler level of understanding than the sophistication our audience actually had. This may be because the audience in attendance were not the same as the target audience for this event, or it may be because the performance was written for a younger audience.
- This event attracted a niche audience of well-informed members of the public. Whilst this should not always be seen in a negative light, in this case, the target audience was non-specialist and this was not achieved.
- Many aspects of this event had been successfully changed in accordance with recommendations following the BIONET event on the same subject. However, the performance itself still lingered on the issue of 'Agenda 21'.

This met with strong negative reactions from the audience, as it had done when the event was performed before.

Profile

There were approximately 30 people at this event. Of these, 17 were asked to complete a short profiling questionnaire. The main findings are detailed below.

- *How did you find out about this event?*
  47 % Time Out
  41% Word of Mouth

This shows a significant difference to previous events in the number of people who found out about the event via Time Out magazine. The figure is much higher than previous results which often fall in at under 20%.

- Age group
  47 % 19 – 35
  47 % 36 – 50

This figure is within our target age range for Naked Science events of 19 – 40.

- Gender
  49 % female
  41% male

- Ethnicity
  94 % white
  6 % black

The ethnicity figures for this event show little diversity. The figure of 6% was represented by one person only. In addition this person had attended Naked Science events before. This event cannot be said to have reached a new audience for us.

Methodology

Detailed observation notes were taken throughout this event. A short entrance survey was also conducted to ascertain the audience profile at this event.

Naked Science evaluation report

Telepathy: Fraud or fact?

3 July 2003

Time: 7.30 – 9.30 pm
Location: Tabernacle gallery, North Kensington.
Speakers:
Caroline Watt, Edinburgh University Parapsychology Researcher
Richard Broughton, Northampton University, Parapsychology Researcher
Chris French, Goldsmiths University, Psychologist
David Marks, City University, Psychologist
Bill Davenport, Magician and magic shop owner.

Recommendations

Many of the findings and recommendations in the following report relate to the new format used at this event. As such the event was a successful test of a new method of creating dialogue. The experience has been useful in illustrating what could be changed for future events, so that the dialogue achieved here can be pushed forwards in future renditions.

• This event format that gave minimal structure to the evening. However, the speakers found this lack of structure to be a barrier (we do not have information on the audience's opinion of this). If we use this format again we should ensure that a strong structure IS in place, without interfering in the relaxed atmosphere that was successful at this event. For example, there could be more intrusions into the open dialogue that ensure the speakers move around the tables, or that the audience experiment with the ESP cards.

• There was not a sufficient balance of information and opinion at this event. This hindered the subsequent development of dialogue that could not progress beyond the opinion stage. We cannot assume that the audience will use all the information provided (in this case, the TV programme and ESP cards) but we do know from previous evaluation that the audience consider information giving to be a critical part of any event. In future, we should allow more designated time for information provision within the event structure.

• It was intended that this event would be controversial and challenging for our audience by discussing who should be trusted in this debate, and whether the scientific experiments / concepts are right? However, observation did not show these issues being discussed. In the future, we must take stronger action to ensure that our own discursive aims are reached. For example, the facilitator could have a stronger role in ensuring certain points are raised during the debate.

• This event was not successful at reaching a disenfranchised audience despite being run and advertised from a community base. In the future, we should take more positive steps to reach members of a disenfranchised community. For example, by using content that is of concern to a particular community (as with the previous Motherland event), or using contacts within the community to target audience members.

• The 'ice-breaker' used at the start of this event did encourage audience members to talk to each other. We should continue to use this type of activity in events where appropriate, and consider using it with content that provokes stronger viewpoints and polarised opinions.

• The speakers at this event were very well briefed to understand the structure and experimental nature of the Naked Science series. However, if they are asked to arrive an hour before the event this time must be carefully used. In the Dana Centre, we might ask speakers to leave a comment online, or to chat to the audience online before an event begins. Speakers should also be provided with food and drink at this point.

• The use of music at the first half of this event was successful at creating a more relaxed and friendly atmosphere. However, we must be sure that we are able to turn it off / on as required throughout the evening.

Event format

This event experimented with a new format based on the idea of a cocktail party. In this case there is little formal structure, and a large amount of time is provided for open dialogue. The event was run from the Tabernacle Gallery in North Kensington which was chosen for its strong links with the local community.

Background music was playing whilst audience members arrived and sat at tables in groups of approximately 6 people. The event started with an icebreaker game to establish opinions. This was followed by free discussion at the tables. After 25 minutes the speakers were introduced. Each speaker spoke for 5 minutes. Another period of free discussion followed. At this point, part of the associated Channel 5 programme was screened and ESP cards were placed on one of the tables for the audience to use. A facilitator was present throughout to lead the proceedings. The event finished at 9.30pm

What went well

- Dialogue did occur between speakers and audience members who were sitting at the same table.
- Audience members spoke of personal stories and their opinions on Telepathy.
- Speakers were readily approached by audience members at all points during the event.
- Speakers were observed to move around the room to sit at different tables and meet new audience members. Speakers arranged themselves such that there was one speaker on each table.
- Music was played during the first part of the event. This provided a useful background to the icebreaker game.
- The venue itself was large and relaxed. The sound and lighting worked well.
- Speakers were well briefed so that they knew about the format and what was expected of them.

What could be improved

- The bar at this venue was too far away from the event area. This meant that people had to leave the room for some time if they wanted to get a drink.
- Although the music had a positive effect during the icebreaker, there was difficulty in turning it off when the speakers were talking. This presented a large barrier as the speaker could not be heard by the audience and was visibly frustrated by the experience.
- Once audience members had sat down they did not tend to move around the room. This meant that each member of the audience only spoke to a limited number of people.
- The speakers commented that the lack of structure during this event presented a barrier to communication with the audience. They felt that etiquette restricted them from moving around the room and meeting a large number of people. However, observation suggested that the speakers did in fact talk to a significant number of audience members.
- The speakers were asked to arrive over an hour before the event began. However, as their briefing was very short it did not fill this hour. The speakers were frustrated as this was perceived by them to be a waste of time.
- Most of the audience members at this event came with at least one other person. However, this event was difficult for those who arrived by

themselves. Emotional barriers to contributing may have been presented by the nature of this unstructured event.

- There was not enough information given during this event. In addition, the information provided was not sufficiently used by the audience. Audience members did not watch the video provided, and only 2 people used the ESP cards.
- Although there was dialogue at this event, the majority observed did not move on from giving opinions and personal stories. This does not therefore, constitute a satisfactory level of dialogue.

Profile

A short entrance survey was conducted with 23 members of the audience as they came into the event. Of those questioned:

- Only 17% of the audience were non-white in ethnicity. This despite the event being targeted at the diverse North Kensington community.

- The event was successful at reaching its target age range of 18 – 45. 78% of those questioned fell into this bracket.

- People found out about the event from a variety of sources.
    - Word of mouth 39%
    - SCM mailing lists 30%
    - Time Out at 22 %

Methodology

Detailed observation notes were taken throughout this event. A short questionnaire was conducted at the entrance to the event to establish the audience's profile. A total of 27 audience members completed the questionnaire. And finally, the speakers were asked to complete an email questionnaire following the event. 3 / 5 speakers responded.

Naked Science Evaluation Report

Stem Cell Research: What are the issues?

A collaboration with the New Economics Foundation

August 2003

Recommendations

Continue using the DEMOCS format in the Dana Centre. This event was a successful way of informing our target audience about stem cell research, whilst also engaging them in a dialogue about the issues this raises.

In a previous trial of this format, the game had benefited from a roving facilitator who was able to answer individual teams' questions. However, the facilitators at this event did not stand out enough for this to occur. In future events (of this format and others) we should continue to use a roving facilitator, but must be sure to highlight who they are so that the audience is happy to ask them questions.

We should experiment with asking each team to discuss a particular set of issues. This would provide each team with a focus, whilst allowing the room as a whole to cover more ground within the topic of stem cell research.

The second half of this event lacked focus and was clearly not as planned as the first half of the evening. When using this format again, the second half must have a clear purpose and structure so that time is not wasted.

Some participants at this event were confused over some of the basic issues of stem cell research, therefore presenting an intellectual barrier to engagement. With this event, and with all other Dana Centre events, we must be sure to provide layers of information so that the basic points are covered before moving on to more complicated discussion.

The beer mats provided at this event were intended as a means of information provision, but did not achieve their full potential. It is not always enough to only *provide* information. For example, we should also point out *how* they can be used and *why* they are there.

Event format

Stem Cell Research: What are the issues? was delivered using an experimental event format, *DEMOCS* that has been developed by the New Economics Foundation. The audience was divided into 5 groups of approximately 6 people each. Each group was given a game to play, which raised the issues surrounding Stem Cell Research for discussion. Game play lasted for 90 minutes. At the end of the event all the groups were brought back together again to discuss the issues raised as a whole, lasting for a further 30 minutes.

Introduction

Stem Cell Research: What are the issues? Was produced in collaboration with the New Economics Foundation who developed the game used in this event. The event was held in the Theodore Bullfrog Pub near Embankment. Doors opened at 7.15pm and the event finished at 9.15pm. There was a focus group attending this event for members of the Dana Centre target audience. Data from the focus group report has been used in this event report.

Profile

A short entrance survey was conducted with 25 members of the audience. Of this group:

• Most people found out about the event via word of mouth – 38%
• The second most common way of finding out about the event was from an email list - 23%

• This event was successful at reaching its target audience of non-specialist independent adults - 62% of those questioned were non-science specialist.
• Of the remaining percentage, only 12% were biomedical specialists.

• At 58% of those questioned there were more women than men at this event
• At 77% of those questioned the majority of this audience were white in ethnic origin
• The age range of those questioned is as follows:
    o 54% between 19 – 35.
    o 19% between 36 – 50
    o 15% between 51 – 60
    o 4% 65+

Methodology

A short entrance survey was conducted with members of the audience at this event. This was used to ascertain the audience profile of the evening. Once the event began, 3 sets of detailed observation notes were taken. Following the event, a focus group was conducted with members of the Dana Centre target audience.

What went well

• This format worked well in a pub and would transfer successfully to the Dana Centre
• The game itself worked well for this audience
    o It proved to be enjoyable for the target audience of non-specialist independent adults.

    "*It targeted well those of us that hadn't broached the subject or worked outside of science professions.*" (focus group participant)

    o The audience learnt about the issues involved in stem cell research. It was particularly appropriate for people who did not have expertise in the subject.
    o The audience engaged in a dialogue with each other, including members of the audience that they did not already know.
    o Due to the game' structure, audience members were able to express their opinions and were conscious of listening to the opinions of others.
• Dialogue was achieved at this event. The majority of dialogue occurred between audience members on individual tables. These groups of people did not necessarily know each other at the start of the event.
• There was evidence of learning at this event, especially from focus group members. This learning was both cognitive (acquiring new knowledge) and affective (challenging beliefs and values).

What could be improved

- During the second half, physical barriers to engagement in the event became apparent. There were NO roving microphones and it became hard to hear other audience members.

- The second half of the event section lacked a clear structure and focus therefore presenting intellectual barriers to dialogue. This also meant that the facilitator had to make many interventions to keep debate going.

  "I would have preferred to get hold of my group's and my ideas and leave rather than more thoughts from others." (focus group participant)

- Beer mats with basic information about Stem Cells on them were produced for this event. However, audience members were not observed to take notice of the beer mats, and focus group members did not cite them as a useful information source.
- At certain points in the game, players were unsure of instructions. Although there were 2 facilitators available at this game, audience members did not appear to notice them.
- Focus group members explained that they did not know the origins of the information given to them at this event. At some points, this left them unsure whether to trust the information or not.

  "I was a little conscious of the fact that I know so little about this subject I don't know what information I was being given and what I wasn't." (focus group participant)

Naked Science Evaluation Report

Who owns the cure for cancer?

A collaboration with the Natural History Museum

Tuesday 16th September 2003

Venue: Darwin Centre, Natural History Museum
Speakers: Richard Sullivan, Sibongile Pefile, Michael Blakeney, Bente Kiltgaard
Facilitator: Emma Freeman

Recommendations

- Continue using the talk show ('Kilroy') format during dialogue events. This was the second time that the format had been used, and on both occasions it successfully generated dialogue. It has also proved to be a flexible format that is responsive to the needs of a particular audience at an event.

- Although this event was successful at appealing to young independent adults, we did not reach a non-specialist audience. If non-specialist continues to be our target audience we should make more attempts to appeal to these groups. For example, we should target specific strands of a non-specialist audience such as the young Christians who came to a previous Naked Science event. However, we must be careful to avoid filling an event with only one audience, and thereby precluding the opportunities for dialogue between people who have different opinions.

- We are starting to see a number of repeat visitors at Naked Science events. Whist this can be taken as a positive indication of the quality of our events, we must beware of catering to an exclusive audience which would be damaging to our intention to avoid the 'usual suspects'.

- The live web-cast at this event ran smoothly in logistical terms. Viewers were able to view the event remotely, and questions were successfully brought into the event from the online audience. However, we must make more efforts to encourage our web audience to contribute during an event. For example, we could ask the web audience to vote on an issue, directly ask them questions, or set them tasks during an event.

- The debate itself may not be enough to encourage people to watch the event online. There should be some difference between a web cast and radio broadcast. For example, we should provide additional visual material such as pictures of unique objects to make full use of the web cast.

- The interval risks being very boring for online viewers. This time should be used to provide other pieces of information and opinion. For example, we could interview individual members of the audience for their views on camera.

- We should use a 'break screen' to indicate to our web audience that a break is taking place in the physical event. This would also be advantageous in the minutes before an event begins.

- Experiment with providing a way for online visitors to test the web-cast before the event has begun. This would ensure that any problems they may have are resolved before the event begins. A trouble-shooting option available with the web cast during the event would also be useful.

Event format

This event was produced by collaboration between the Natural History Museum and the Science Museum. The event took place in the Darwin Centre at the NHM and was web-cast live over the NHM website, and with a link from the SCM website. The event was later archived on both Museum's sites.

This event used a format for generating discussion that had been successfully trailed during a previous Naked Science event. Based on a 'Kilroy' style talk show,

audience members and invited experts were seated on benches. The facilitator initiated discussion amongst participants and acted as a MC moving between participants who wished to make a comment. During the event the web audience were given the opportunity to ask questions via email.

Methodology

Detailed observation notes were taken throughout this event, and 2 members of Science Museum staff watched the live web cast as the event took place. In addition a short entrance survey was conducted to ascertain the audience profile at this event.

What went well

- The audio-visuals used throughout this event meant that there were NO physical barriers to dialogue at this event. The roving microphone was effective at reaching audience comments, and the visual projection of the event onto screens in front of the audience ensured that all visitors could see those speaking, no matter where they were in the space.
- The seating arrangement meant that invited guests were successfully integrated into the audience to break down emotional barriers to contributing for audience members.
- There were some indicators of learning, for example audience members picking up on points made by other participants.
- Another notable example of learning occurred when one of the invited guests asked for factual information from the audience:

  What's your starting point? How do you decide which plants (to investigate)? (NHM Speaker)

- Audience members contributed information as well as the invited guests, therefore going some way to achieving intellectual parity with them.
- The debate constantly moved forward throughout this event, never getting stuck on any single issue.
- A suggestion from the web audience was implemented during the event, with the result that people making a comment introduced themselves before speaking their point. This helped to break down barriers between the audience and speakers, and it is very positive that the facilitator was able to respond immediately to suggestions from the audience.

What could be improved

- This event attracted an audience who were informed about the subject. However there were few members of the audience who were less specialist with the result that the dialogue at this event remained un-emotional and distanced from the topic.
- Questions asked during the event were predominantly factual, not straying far into the emotional angles of the topic. Whilst dialogue nonetheless occurred, there was very little variety in the kind of dialogue at this event. This despite at least 2 members of the audience attending because of their personal experience of cancer.
- Although not question and answer, debate tended to occur between the speakers and the audience rather than between audience members themselves. For example, between 19.00 and 20.30 approximately 14

points were raised by the 4 speakers, whilst only slightly more comments, 17, were raised by the audience of 45 people.

Live web-cast

- The facilitator effectively brought in questions that were asked by online visitors.
    - o Whilst the discussion may have moved on when questions arrived, the facilitator brought up the questions when they became relevant again so that the discussion was able to remain focussed.
    - o Audience members treated these online questions in the same way as those asked by other people in the room.
- However, there were some barriers to contribution for our online visitors.
    - o Physical barriers emerge as visitors try to type a question, whilst still listening to the debate.
    - o Motivational barriers mean that it is very challenging to inspire an online audience. Contributions should be actively encouraged from our online visitors by using different and increased means of encouragement to those used with visitors in the physical space.
- During the break of the physical event, the web-cast continued by showing the (empty) seats inside the Darwin Centre. Our online viewer commented that this was confusing and presents barriers to including online visitors. It should be made clear what is happening when there are changes in format to the physical event.
- Furthermore, the break is dead time for the online viewers and they may be encouraged to leave if the break is too long. We should provide other material that will be engaging to the online audience during the break.
- At the end of this event, the facilitator remained on camera for a moment after she had closed the event. We should make sure that an event finishes neatly for both the web viewers and physical audience.
- On this occasion, the staff member watching the web-cast had initial difficulties getting it to work. These were resolved by contact with the staff manning the web-cast inside the Darwin Centre. Whilst it is very positive that online viewers were able to get immediate advice from the web-casting team, it also raised the suggestion that we could provide a 'test your web-cast' facility just before the event begins.
- In addition, it would also be useful to provide a 'trouble shooting' section with the web cast for any difficulties in usage that occur during the event.
- The audio stream did not work as effectively when viewers held the microphone too closely.
- Our online viewer felt that the web-cast screen options of big or small did not reach a happy medium: they were either too big (and poorer quality) or too small (difficult to view).

Profile

A short survey was conducted at the entrance to this event, and during the 20 minute break. Of the 18 people questioned, the following results were obtained:

1. How visitors found out about the event:
- It is significant that only 5% of those asked had found out about the event via the Science Museum's information.

**28% Natural History Museum (web-site
and flyers)**
28% Word of Mouth
17% Time Out
5% Science Museum (website and flyers)

2. Visitor's occupations:
- The majority of those asked had a science background. However, our target audience at this event was more general

28% Science Student
28% Sciecne Professional
17% Lawyer
28% Other

3. Gender, age and ethnicity*****
*please note that although only 56% *of those questioned* were white, a visual observation found that this figure to be closer to 80%

- As at previous Naked Science events, there were more women than men in attendance.
- The significant majority of those asked were within the target age rage for this event of 18 – 45.

61% female	**83% aged between 19 - 35**	
39% male		**56% white**
		22% Asian
		17% Black

Naked science evaluation report

Pub Quiz with a twist

October 2003
Brookie Fraser Jenkins and Ann Katrin Koester

Recommendations

- Continue using the Pub Quiz format in the Dana Centre as it works well as a light-hearted, informal and enjoyable science event. The Pub Quiz provoked bursts of discussion within groups, was thought provoking and encouraged people to look at issues from a new perspective (e.g. Cutting Edge Q's), however it should NOT be considered as a dialogue event. The event format does not cater for any in depth discussion, and only displays minimum indicators of dialogue.

- During break time dialogue occurred amongst different groups throughout the room, thus indicating the benefits of using breaks to encourage dialogue. It appeared that people were having fun and that the informal event seemed right for them, offering an opportunity to meet new people, have something to talk about, and having an enjoyable evening out. *One group stated: "this is just perfect for us, we are research scientists and this is ideal for us to meet other people who are also interested in science, while having fun and a night out, it's a good way to end the day".*

- continue using music as a tool to direct the audience's attention to beginning, end, break and to build up tension/excitement for certain quiz elements, it is thus easier for the moderator to lead the audience through the programme.

- Continue using SMS as a tool to promote discussion amongst the audience. It works well as a tool for people to give provoking/funny answers, thus also contributing to a buzzy atmosphere. It may also encourage people to say what they would not articulate publicly otherwise.

- Make sure <u>one</u> moderator is leading through the event (unless format is initially intended to be delivered by more), this is crucial for the success of the event as it sets tone and atmosphere for the whole evening.

- It is crucial that the event does not last longer than 1.5 – 2 hours including a break(s). The pace of the event, audience's attention span and engagement were much reduced during the last half an hour of the evening.

- Make sure that the audience is aware of the mystery objects being essential to the quiz, by pointing this out several times before they become relevant to the event (e.g. in introduction and just before break).

- The second half (part two) of the event must be strictly timed and structured to maintain audience's attention. A light-hearted atmosphere at a prolonged evening requires punchy questions with short answers. Hence some questions of part two, should be exchanged with some of part one, e.g. exchange Round 5 (Number Crunching) for 10 (The Living World of Achievements).

- Consider reducing physical barriers to objects table in terms of access and handling/viewing time by placing the objects on a free standing table to be approached from all sides.

Introduction

Pub quiz with a twist was held in the Theodore Bullfrog pub near Embankment tube on Tuesday 21st October 2003. The event used the basic pub quiz format to encourage the audience to engage in discussion of contemporary science issues. The event started at 19.30 and continued until 22.00. In total, 31 members of the public attended this event.

This was the first time that Naked Science had used this format with a public audience. In addition, this event trailed Naked Science's first use of SMS messaging for its capacity to generate dialogue amongst the audience.

Methodology

A short questionnaire was conducted at the entrance to this event to ascertain the audience's profile. In addition, two sets of detailed observation notes were taken throughout this event.

Profile

A short entrance survey was conducted including all 31 members of the audience.
- most people found out about the event by word of mouth (59%)

- almost equal numbers of people found out about the event through a TimeOut advert (13%) and the Science Museum mailing list (16%). Only one person (3%) learned about the event through the Science Museum Newsletter.

- the event was successful in reaching it's target audience of mainly non-specialist independent adults between the age of 18-45:
  - 81% Non-scientist Specialists (of which 12.5%work in science related professions, e.g. science editor)
  - 16% technology based professions
  - 16% Research Scientists
  - 3% Other

- the age range represented by the audience is as follows:
  - 91% between 19-35
  - 9% between 36-50

- there were more women present within the audience:
  - 59% women (two thirds)
  - 41% men (one third)

- the majority of audience were white in ethnic origin (88%)

What went well

• This format worked well in a pub and would transfer successfully to the Dana Centre. Music proved a successful tool in controlling attention/noise levels.

• The quiz worked well for the audience :
  o it proved to be enjoyable for the audience.

- It was thought provoking with reference to recent science news stories that effect every day life.
- It challenged opinions particularly when groups had to settle on one answer, it also encouraged people to look at things from a different angle (e.g. 'cutting edge' questions about stem cell research).

- the event provoked some conversation although the format of the event did not include thorough discussion time for these issues.

- the event proved challenging and engaging and encouraged people to find out more about certain science related topics, this was evident in dialogue occurring amongst individual groups.

- During break time dialogue also occurred amongst different groups throughout the room, thus indicating the benefits of using breaks to encourage dialogue.

- generally there were no intellectual, social or physical barriers within the event format or set up. However, there was some overcrowding around the objects table during break time, resulting in limited access and consequently limited time to investigate the mystery objects.

What could be improved

- this event lasted 2.5 hours. In order to engage the audience throughout the evening and maintain a light-hearted atmosphere timing is crucial and should not exceed 1.5 hours with a 15min. break half way through the event.

- during the second half of the event structure and timing lacked the concise organisation required to keep the audience engaged at all times. Some questions were too complex for a progressed evening and might work better during the first half.

- a) during break time many people gathered around the mystery objects table at once. Overcrowding and handling of objects requires time and space, suggesting a free standing table to be more suitable, this could be in the middle of the room or generally more accessible from all sides.

  b) initially not everyone understood that the objects were part of the quiz, some only
    - realised when answers had to be given. Firstly, the purpose of the mystery
    - objects should be highlighted more than once by the moderator during the first
    - half of the event. Secondly, by placing the objects on a softer background
    - (museum type packing or anything other than the bare table surface) might also
    - raise awareness of their relevance.

- During the second half, the moderator was frequently interrupted by other staff members, resulting in confusion for the audience and a less slick presentation.

SMS

The Pub Quiz trailed 2 experimental forms of SMS messaging as a means to encourage contributions from the audience.
- Test 1:
    - "Who are Isis and Aurora?" was displayed, and answers invited from the audience.
    - In total, 10 replies were received.
    - It is estimated that 6 of these were from Science Museum staff members.
- Test 2:
    - 'Picture round' where an unusual photograph was displayed and captions were invited from the audience.
    - In total, 13 captions were texted in.
    - It is estimated that at least 5 (38%) of these were from staff members.
    - However, the majority of texts received to this second test were from new users (69% including staff members.)
- Observation indicated that the second test was the most popular, provoking bursts of discussion throughout the groups.
- However, as with other questions asked during the quiz, the discussion was not sustained for a significant period of time.
- In both tests 1 and 2, individuals texted once only (excluding staff members)
- The SMS projection could be easily seen by all in the room. When a message is received a sound can be heard – this is a useful tool for drawing attention to the projection and should be continued in future uses of the system.
- There were no obvious comprehension barriers to using the system.

Naked Science Evaluation Report

Guilt, Blame and Stigma
The black experience of HIV/AIDS
(World Aids Day event)

Ann Katrin Köster
December 2003

Recommendations

- Adapt a flexible marketing strategy to address those groups the event is targeted at, e.g. specialist papers, community centres, etc. Most visitors to this event found out about it by word of mouth, an unreliable source of marketing. Make sure that events are also advertised (e.g. flyers) in the Science Museum, for those members of staff who have no access to e-mail. One person stated that she was very disappointed that she had to find out about the event through the New Nation Paper, while she is science museum staff.

- Reduce emotional and social barriers to the event by meeting visitors expectations in terms of content and presence of the right audience. Thus people can relate to one another more easily and share issues, beliefs and opinions, which generates a sense of social acceptance.

- Having the film script writer amongst the audience, means that this person must be introduced to acknowledge his contribution, thus reducing potential emotional and social barriers. During this event the discussion was disjointed and incoherent because the scrip writer and his group of friends pursued a different way of dealing with the subject than set out in the event objectives.

- The use of a short introductory film to this event was suitable to break down some of the intellectual barriers (e.g. HIV affects everyone).

- Physical barriers to comfort should be overcome (e.g. temperature). Many participants were wearing coats during this event. Barriers to comfort reduce willingness to participate in the discussion.

- Provide stairs for better access to stage and ensure that facilities are wheelchair user friendly (e.g. heavy doors to access lift cannot be opened by wheelchair users).

Introduction

Guilt, Blame and Stigma was part of the Naked Science series of events and was held in the café/bar at the Dana Centre on 1st December 2003 in tribute to the World AIDS Day. This event explored stigma and discrimination for people living with HIV/AIDS and how cultural attitude, assumptions and taboos create additional problems for the black community. The 15min. film *"Angels and Dragons"* addresses these issues and questions. In order to encourage discussion, it was shown at the beginning of the event, which started at 19.00 and continued until 21.00. There were 14 people in the audience and the panel of specialists consisted of five members including the moderator.

Methodology

A short questionnaire was conducted at the entrance to this event to ascertain the audiences' profile. In addition, one set of detailed observation notes were taken throughout this event.

Profile

A short entrance survey was conducted including all 14 members of the audience.

- A total of 72% of the audience heard about the event by word of mouth (36%/5people) and the New Nation Paper (36%/5 people). The remaining visitors found out about it through the Dana website (2 people/14,3%) or other newspapers, such as the Standard or Guardian (2 people/14,3%).

- the majority of the audience reached by this event works within media or art related fields (8 people/58%). Other professional/interest groups represented within the audience are as follows:
  > 3 people/21% - nurses/medical researchers
  > 3 people/21% - other (e.g. administrators/engineer)

- the age range represented by the audience is as follows:
  > 5 people (45.5%) between 19-35
  > 9 people (64,5%) between 36-50

- the majority of the audience were female:
  > 9 people (64%) - female
  > 5 people (36%) - male

- the event was attended by equal numbers of white and black people in ethnic origin:
  > 6 people/43% - Black
  > 6 people/43% - White
  > 2 people/14% - Other/Mixed

What went well

- the facilitator to this event succeeded in directing issues and question to the panel of speakers and the audience. Particularly during the second half of the event provocative questions were successfully addressed at the audienc thus promoting discussion.

- The second half of the event was more successful in terms of dialogue. The audience asked more rhetorical and challenging questions. For instance: " *Why does the event focus on black and Asian communities only, isn't everyone affected by it and don't we all need to learn more about it, WAD should not be specific?"*

- The film *"Angels and Dragons"* succeeded in highlighting the emotional strains HIV/AIDS causes for infected people. It critically dealt with issues such as drugs, transmission and fear. The film highlighted the common preconception of HIV infection being transmitted through ethnic minority groups.

- The handouts with information on event content and speakers worked very well for the audience, particularly because one speaker joined late and had thus not been verbally introduced.

- continue using head microphones for the speaker panel. These are easy to use for speakers and sound was clear.

What needs to be improved

- the number of visitors to this event was very low (14 participants). Only half of the audience was black/other in ethnic origin. The number of nurses or medical workers amongst the audience was low, thus indicating problems with the marketing strategy, which clearly did not reached all groups of potential audiences.

- The event failed in meeting visitors expectations. One audience member highlighted that it was disappointing that those who the event content primarily concerned were not represented amongst the audience.

- The event content was not sufficiently engaging, two people left during break time (2 out of 14 = 14.5%).

- Event topic and film content did not match sufficiently, thus being confusing for the following discussion. Because the film did not sufficiently highlight the effects of guilt, blame and stigma within black communities but primarily addressed issues related to blame as cultural preconception, the audience seemed unclear about what to focus upon.

- Although the film script writer was amongst the audience he was not included as a speaker himself. The panel discussion frequently veered off to include is contributions, which, to some degree, were opposing to the event objectives.

- The event was not consistent in terms of contributions and raising new issues. Views of opposing interest groups were not challenged. Although two conflicting interest groups were present within the audience (artists/script writer vs. media related/health workers) none engaged in challenging the others point of view. While the artists wanted to discuss the deeper meaning of the film, others were primarily concerned with formalities such as *how Dana justifies focusing on minority groups while World AIDS Day concerns everyone"*.

- The temperature within the event space was very low, thus many people had to wear coats. It is essential to overcome these physical barriers to achieve a successful event.

- Assistance should be offered to wheelchair users, including opening the heavy doors to access lifts.

- Access to the raised stage was difficult for some of the speakers, thus steps and possibly a movable ramp for wheelchair users should be provided.

Naked Science Evaluation Report

Confronting the Culture of Silence
(World Aids Day event)

Ann Katrin Köster
December 2003

Recommendations

- The open mindedness and wholehearted attitude conveyed by the panel of speakers in this event worked very well and helped raising many relevant issues related to HIV/AIDS in South Asian communities in the UK and India.

- The event was attended by only a small number of visitor. Nurses or health and social workers were not present within the audience, nor those affected by issues raised during the event. This strongly suggests problems with the marketing strategy, which did not reach all groups included within the target audience. This type of event should be advertised in e.g. hospitals, Universities, GP surgeries, kindergartens/mother and child groups and libraries etc.

- Instead of showing a 45min film, specific episodes relevant to the target audience and event aims and objectives should be chosen. Thus relevant questions relating to specific issues can be raised by the audience or highlighted by the moderator/speakers/film director, consequently encouraging dialogue. Past experience has shown that
    - 20min. film = good/successful addition to an event as seen in "Motherland"
    - 50min. film = bad/unsuitable to generate dialogue as evident in this vent. The reasons being:
        - overall length of the event
        - not leaving enough time for discussion
        - not leaving sufficient time for breaks
        - audience may not feel encouraged to engage in dialogue
        - but want to relax after having seen the film.

- Make sure that the event setting creates an informal atmosphere. Warm but bright light opens a space and encourage people to interact. Food and drink should be offered beforehand as it assists in breaking down barriers to social and emotional access, it gives people something to do, or even talk about while waiting.

- Reduce social and intellectual barriers to dialogue by arranging seating for panel and audience in a half circle. Speakers and audience can thus address each other more easily and which opens discussion for all participants.

- Aim to create a light hearted atmosphere for this event type. One/two breaks give people a chance to talk to speakers informally. Previous experience has shown that intervals encourage dialogue (e.g. Pub Quiz). This is particularly if questions or specific aspects are raised just beforehand, or the audience has been given something to puzzle about. This could than become part of the subsequent open discussion.

- Make sure that all equipment is tested for technical difficulties beforehand and the film has been trial run. Ensure that a microphone is available on standby for those who speak quietly, it is vital that all physical needs (e.g. hearing) are adequately met.

Introduction

Confronting the culture of silence was part of the Naked Science series of events and was held in the D-Studio at the Dana Centre on 1st December 2003 in tribute to the World AIDS Day. This event explored the struggle of current HIV awareness campaigns to reach some of those who are most vulnerable. To break down the barriers of South Asian women, the Bollywood style film *"EK Pal"* has been used to promote this campaign. Within the event it was used to encourage the audience to engage in discussion of HIV/AIDS issues affecting minority communities living in Britain. The event started at 13.00 and continued until 15.00 and was attended by 11 people, the panel of specialists consisted of five members including the moderator.

Methodology

A short questionnaire was conducted at the entrance to this event to ascertain the audiences' profile. In addition, one set of detailed observation notes were taken throughout this event.

Profile

A short entrance survey was conducted including all 11 members of the audience.

• The majority of the audience heard about the event by word of mouth (6 people), the others found out about it through the DC mailing list, a link to the DC website and the TimeOut (1 person each).

• although visitor numbers were low, the event succeeded in reaching certain groups within its target audience. These included health workers, professionals from medical related fields and researchers (4 people/37%) as well as professionals from either a museum related field or other public cultural sectors (3 people/27%). One person (9%) stated being unemployed and attended purely out of interest.

• the age range represented by the audience is as follows:
5 people (45.5%) between 19-35
6 people (54.5%) between 36-50

• the majority of the audience were female:
8 people (73%) - female
3 people (27%) - male

• ethnicity profiling concluded the following:
6 people (56%) - Asian/Mixed
5 people (44%) - White

What went well

- The film '*Ek Pal'* presented an interesting case study, highlighting problems of accidental transmission of HIV due to ignorance towards issues regarding STD's. This was with particular emphasis on problematic cultural attitudes, which inhibit individuals' confidence in being responsible to proactively pursue protective measures.

- This event succeeded in presenting a highly specialised, enthusiastic and knowledgeable panel of speakers to the audience. Thus representing the subject from a medical, scientific, social and humanistic point of view.

- The audience's demeanour indicated that they were interested in the subject area and event content. Some conversation takes place amongst the audience and speakers before the event.

- After the event engagement was sustained as some visitors continued to discuss issues amongst themselves and with the speakers.

- The moderator succeeded mediating amongst panellists and the audience by providing additional information, explaining and highlights problematic/controversial issues.

What needs to be improved

- Although this event was successful in reaching some of those identified as the target audience, it was attended by only a small number of people. As evident from the audience profile data, most people found out about the event by word of mouth suggesting an insufficient marketing strategy.

- Visitors to this event were representative of those included within the target audience. However, no (student) nurses or health and social workers attended nor those affected by issues raised during the event or who have experienced related problems.
- Screening of the film '*Ek Pal'* lasted for approximately 45 minutes. With the intention to encourage dialogue the film should be reduced into shorter relevant scenes to be discussed or commented upon accordingly.

- Only three members of the audience contributed to the discussion or asked questions, all of which were raised during the last half and hour of the event.

- Although the film highlighted problems of HIV transmission and issues of guilt and blame infected people have to deal with in south Asian communities, it was not sufficiently highlighted that women within these cultures are not tolerated to take initiative in actively preventing STD's.

- Throughout the event the audience appeared uncertain of whether the discussion was aimed at South Asian minority groups in the UK or communities in India. It was not specifically highlighted whether issues are the same or how they differ for both. Due to these uncertainties questions were primarily factual and no thought provoking discussion developed.

- The following are emotional and social barriers that were identified:

- o Technical difficulties resulted in an interruption of screening the film after approximately 25minutes. During a 10min. break, to remedy the problems visitors were offered tea, coffee and biscuits. Conversation amongst visitors was very limited and occurred primarily amongst participants knowing each other. Socially the format would have been more informal by offering snacks and drinks before the event started, thus giving people an opportunity to talk to each other and break down emotional barriers.

- o Participants were not encouraged to interact with the speakers after watching the 45min. film. After the first break the event run for approximately 75min without an additional interval.

- The event setting was formal in atmosphere. Upon entry light levels within the room were slightly dimmed, creating a subdued atmosphere. Visitors hardly mingled but sat down awaiting the start. The panel of speakers was seated in a straight line confronting the audience. A half circle, for both speakers and audience could have reduced this formal setting.

Naked Science Evaluation Report

4th Room (3D chat Room)
A Virtual Event

Ann Katrin Köster
February 2004

Interface Functions/Glossary:

Who's Online – a document listing number of participant and their names.

Instant Messenger – a service that allows you to chat online with another user, instant messenger is not part of the public discussion.

Exit Event – this function allows the user to leave the main event space thus going back to the orientation space. This is where participants gathered before the event began, to get used to the format and controls.

Poll – counting of votes to determine the audiences' opinion in response to specific questions, e.g. "do you believe in telepathy?"

Voting – in addition to the poll another form of voting included positioning avatars within specific areas of the room. For instance to show your opinion in response to the moderators question "do you believe in ESP?", those who believed moved to the left (grey area of the room) those who did not believe to the right (orange area) and those who were unsure positioned themselves in the centre of the room.

Reference Material – this list of documents provides background information for the participants to find out more about e.g. specialists, telepathy, ESP, etc.

Chat Transcript – a scrollable reference document recording the online conversation.

Avatar - a digital "actor" or icon that represents who you are and where you are in the virtual world, e.g. 3D chat rooms. An avatar is used to navigate your surroundings and communicate with other users. All contributions appear in form of speech bubbles that remain visible on screen for several minutes, and subsequently are recorded as the chat transcript.

Edit Character - The avatar can be adjusted in appearance, e.g. type of character, colour of clothing, expressions (grumpy, happy, jumping), whatever you choose is the image that represents you.

Send – the function through which 'edit character' is activated.

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Overall Main Finding

This virtual format has the potential to be highly appealing to the young Dana target audience. However, if the "4th Room" becomes part of the Dana web-strategy this event strand needs to set out clear short, medium and long term aims and objectives (e.g. social inclusion intellectual/geographical accessibility) in order to become a valuable resource for visitors. The flist of recommendations below must be implemented in order to make the resource worthwhile and accessible to audiences, and to ensure that it fits within the wider objectives of the museum (and Dana) to promote dialogue and learning.

Recommendations

Evaluation has generated numerous recommendations some of which are primarily to be considered by the content team (moderator/controller) or the technical team.

Content and Dialogue

- This type of event needs strong moderation in order for participants to understand the aims and objectives (e.g. voting to indicate whether participants believe in telepathy or not) and to maintain the audiences focus on them. To achieve sustained engagement with the topics discussed and encourage participation, it is vital that relevance of questions and activities is explained to the audience.

- Evaluation revealed that online events that are task driven, rather than a series of long lectures, are more successful. To maximise the potential of 4th room (to promote science dialogue irrespective of geographical boundaries) tasks, strict moderation and issues of controversy need to be increased and more clearly defined.

- The event structure, specialists and tasks must be clearly introduced. Failure to do so will reinforce social/emotional and intellectual barriers (e.g. make people feel confused), thus encouraging people to veer off the main discussion.

- The conversation moved rapidly, making it difficult for participants to follow all contributions and discussion contents. Adjustments to pace (slower) are required to eliminate confusion amongst the audience. Consider a slow but not delayed appearance of speech bubbles on screen, to facilitate reading of comments.

- Specialists must be clearly briefed on Dana's mission to encourage dialogue amongst specialists and the public. Language and technical jargon must be accessible or explained to the general audience thus avoiding barriers to intellectual accessibility.

- Highlight why audiences' opinion is relevant to the debate. It is vital that specialists include participants in their discussion to avoid social and emotional barriers. Consequently participants should feel that they have taken part in something worthwhile and constructive and leave with a sense of accomplishment.

- Continuous presence by specialists is vital, not only to ensure accurate information provision on the latest research and controversy, but to show that the audiences' comments are valuable to specialists.

- Approximately half the participants were confused about the instant messenger function. As it allows dialogue on a one to one basis only, instant messenger does not meet the objectives of public dialogue, thus becomes irrelevant to Dana's mission.

- The event should be facilitated by a moderator and controller. The controller should be able to move avatars thus bringing attention to certain activities, e.g. voting (by moving those who have not voted into the centre of the room their opinions can be challenged or they could be encouraged to place a vote.)

Technical Recommendations
- Users highlighted that that the interface appeared slightly immature in terms of avatar characters and functions which were available to represent specific expressions. Expressions must be relevant to the level and type of discussion. Seriousness of discussion and format can be improved by using expressions such as raising hands or shaking head to indicate disagreement, rather than rainbows and flirty hearts.

- Specialists' and moderator's avatars must be edited to stand out as individuals. The general audience should not be able to imitate or strongly resemble their virtual characters (e.g. size and colour). Furthermore their text bubbles ought to stand out in colour and/or font.

- The word input to appear in avatars' speech bubbles should be increased. The majority of participants expressed annoyance to be extremely limited in length of their contribution. They felt that it reduced the quality of discussion.

- Structure and navigation need further improvements. Relevant documents under reference material should be highlighted to direct people to activities and relevant background information. Access to reference material should be provided during, before and after (on Dana Website) the event to allow people to familiarise or engage further with the subject.

- Include a bulletin board or timed event schedule/agenda as part of the interface, thus highlighting relevant headlines, questions and activities. Participants joining the discussion half way through will thus be enabled to catch up with the contents.
    - It is vital to visually highlight links for the audience to find, for example, the poll or ESP experiment at the relevant time.
    - The moderator should summarise findings from activities thus making meaning of the data and avoiding barriers to social/emotional and intellectual accessibility.
    - This function would replace the need for an event transcript.

- Participants did not respond or understood the relevance of the web camera. If it is used it must be directly linked to experiments and presentations. Consider enlarging screen and improve clarity of picture.

Introduction

4th room was the last event in the series of 16 Welcome Trust sponsored events. The objective of this event was to use web-based activities to promote science related dialogue. The event was housed within a virtual 3D event space, in which

moderator, specialists and the audience appeared as avatars. The subject of discussion was "Telepathy – does it exist?"

The event was housed by Lightmaker on behalf of the Dana Centre and was globally accessible via the internet. Participants included equal numbers of users who accessed the event form a private network place and users who chose to use computers in the Dana centre D-Lounge. The event lasted for one hour, from 19.00 – 20.00 on 25 February.

Profile

This event was attended by 19 participants (15 audience members; 4 specialists), two audience members left early. Data representing age range, ethnicity and gender is not available for this event.

Methodology

Two sets of detailed observation notes were taken throughout this event. One looked at dialogue, engagement and controversy represented on screen and the second observed reactions and engagement of those who physically attended the d-lounge. A questionnaire was conducted with both speakers and participants. Those who physically attended completed the questionnaire immediately after the event and an e-mail questionnaire was sent off to everyone else. Ten out of 19 questionnaires were completed including all four speakers but only six audience questionnaires.

What went well?

- Although the majority of participants did not use chat rooms and discussion boards regularly or ever before, they described the virtual discussion room as being an *"easy to use"* innovative format.

- The event succeeded in holding peoples attention repeatedly for short periods of time:
(Moderator)	*"who believes in ESP?"*
(Participant1)	*"how does telepathy differ from ESP"*
(Participant2)	*"I don't believe in ESP"*
(Moderator)	*"Anyone…?"*
(Participant2)	*"Louie believes"*
(Participant3)	*"don't know, not enough evidence"*
(Participant4)	*"it depends on how you define it"*
(Participant3)	*"I don't know – I'd need to see evidence"*
(Participant5)	*"…wouldn't say believe…intrigued…"*
(Speaker)	*"ESP is not something one believes in - rather one can have an opinion"*

- The majority of people highlighted that they liked the idea of the Science Museum running virtual events like 4th room, because irrespective of peoples geographical location, everyone could participant in the event.

- Half the participants highlighted that although they did not feel science being remote or inaccessible, online events like this do contribute in breaking down possible barriers, particularly because of the innovative way of presenting science and generating new ideas.

- 4th room was experienced as an anonymous way of communication thus enabling people to raise questions they would not ask otherwise.

- About half the participants felt that this type of event succeeds in highlighting that scientists are and should continue to become more open about their work.

What needs to be improved

- Within the chat environment it was very difficult to control the a conversation because:
    - There was a high number of participants
    - The conversation was moving very fast
    - Various discussions were taking place simultaneously

- Throughout the event it was difficult to identify moderator and specialists. Approximately a third of the participants highlighted that they thought there was no moderator to the event.

- Participants expressed disappointment as they felt that specialists and content were not introduced clearly enough. This resulted in obscured event aims and objectives and secondly raised barriers to emotional and social acceptance.

- The chat environment lacked a sense of seriousness thus preventing participants to engage and sustain a conversation exploring science facts.

- Barriers to sustained dialogue originated from a lack of organised activities or tasks and presentations of relevant examples. The audience continuously split up into smaller groups engaging in various discussions simultaneously, thus veering off the main conversation topic:

    (Moderator)   "Hello everyone"
    (Participant A)   "Heya"
    (Magician)   "Hi I am Bill the Magician"
    (Participant B)   "M + C should get shades"
    (Participant C)   "shades would be cool…"
    (Moderator)   "has everyone voted?"
    (Magician)   "Moderator told me Dana has an event on telepathy tonight!"
    (Moderator)   "has everyone voted?"

- The conversation moved very fast with various simultaneous discussions amongst different groups of people, thus it was difficult to follow. Evaluation revealed that people found it hard to develop a satisfying exchange of ideas, facts and experiences:

    "I would have like to have been able to write more in one go, and on several occasions, I ended up deleting replies I was in the process of making as the 'conversation' moved on to another topic too quickly".

- The majority of participants pointed out that the limited number of words allowed per speech bubble was annoying and confusing.

- Avatar speech bubbles overlapped when two avatars in close physical proximity both participate in the conversation, Consequently one of the two comments cannot be read by other chat room participants.

Naked Science Evaluation Report

e-dialogue: front end research

15 July 2003
Sarah Dhanjal and Brookie Fraser Jenkins

Executive Summary and Recommendations

- **We cannot assume that this target audience will freely engage in online dialogue.** This research suggests that even when prompted, the target audience were unwilling to leave comments online. We must therefore ensure that all barriers to contribution are minimised, and that all motivational opportunities are maximised throughout a web site.

- **Controversy.** It is far from clear that controversial material is motivational to our target audience once they are online. This comes as a contrast to the same group of people when attending a live event. We must therefore consider how material can be effectively used to engage this audience. This should take account of motivations for using an online forum in the first place. For example, will the target audience be browsing online or searching for specific material? How will this affect their expectations and experience?

- **Moderation.** There are merits and disadvantages of any type of moderation. A balance needs to be reached between the individual site's aims and the users' online experience.
    - Heavy moderation ensures that there is nothing undesirable on the site, but it would deter people from leaving messages due to the length of time it takes. It would not be conducive to active discussion.
    - More lax moderation leaves the site open to abuse. However, there is more room for active, real-time or turn-based discussion.
    - All posts must receive a response of some form.
    - Off topic messages were a frustration to participants who wished to investigate a subject whilst online. These should be confined to one area or flagged up appropriately.

- **Content:** We must be careful to minimise emotional and intellectual barriers that will be posed by our content. Regardless of the target audience's background knowledge, it is likely that the audience will be intimidated by content that *they feel* requires specific knowledge to understand. The audience will not contribute to a discussion if they lack a confident belief in the importance of their comments, and the opinion they have to contribute. Therefore, we must ensure that it is made clear that all opinions are valuable to the discussion (and then include a representative range), and we must provide the audience with the knowledge they need to be able to contribute.

- **Communication:** Users enjoyed getting information from other people who were online. This is reflected in live event evaluation where audience members enjoy listening to other people's opinions as an alternative information source to books etc. This is also an opportunity to take advantage of user's expectations to find people with similar motivations to themselves online.

- **Exclusivity:** We must be wary of user expectations of e-dialogue. Users anticipate exclusivity in an online arena and feel easily out of their depth. However, this must be balanced with a need for meaningful and entertaining content.

- **Clarity of titles**. Titles must give an accurate reflection of the content they describe. A fundamental problem for both live and online material is

when a title misleads the audience. This mismatch between expectations and experience will pose an immediate barrier to all users.

- **Competition and humour**: These can be strong motivational forces that we should harness to encourage audience members to contribute and return to the web site.

- **Maximise recognition:** Message boards should be explicitly linked to events or other information pages. Users will be more likely to look at something they recognise.

Introduction

This research focuses on the expectations and experience of the Dana Centre target audience of independent adults aged 18 – 40. It forms part of investigations into the strengths and weaknesses of online dialogue, with a view to engaging the target audience in the Dana Centre's online spaces; continuing and expanding dialogue from events themselves.

Methodology

This research was conducted with 10 members of the Dana Centre target audience. Each person was asked to take part in an accompanied surf and short interview, with each session lasting for a combined total of 1 hour. In total, three sites were used. These were chosen according to their content and methods of moderation. Sites used are listed below:

- BBC
- alt.sense
- ePals
- The Naked Scientists

Note on the accompanied surf
By their own admission, the majority of the interviewees would not have left messages without prompting. This may be due to a number of reasons which are discussed throughout this document. It should be noted, however, that once prompted the behaviour of the interviewees may have changed. Once asked to post a message, participants were looking for somewhere to post, rather than browsing.

Barriers to engagement

Physical barriers

- The group, who represent our target audience, use computers and the Internet regularly and did not display any significant physical barriers to use.

Emotional barriers

- Both those who were familiar with online dialogue and those who were not perceived e-dialogue as being an exclusive medium:

There seemed to be lots of different people. They were all on everyday. They seemed to know each other.

It seems like everyone on e-dialogue has been using it for years. Also it's like they use a language, I wouldn't know what to write.

- Some of this group held a negative perception of the other users of an e-dialogue site. This was true for both people who had used e-dialogue sites before, as well as for those who hadn't.

…People who have way too much spare time and don't like social interaction. Cyber geeks.

…Probably men mostly. Obsessed about stuff.

- Other concerns were of a more personal nature:

I'm dyslexic, so I'm not very good at typing. Someone who doesn't know me might not understand.

- There is a certain level of distrust of e-dialogue sites. Some of the participants expressed a concern at providing their personal details. One of the non-users made the point that "*you never know who might be in there*", signalling a distrust of other users of sites. In addition the motivation of the sites and moderators was questioned (see Moderation).

Intellectual barriers

- Only 2 people of the 10 interviewed expressed an interest in current affairs. Previous focus groups with the same sections of our target audience have indicated that this is a subject of great interest to the audience.

- The majority of the interviewees avoided Science until they were prompted to do so. Partly because of participating in Science Museum research, participants said that they felt impelled to look at the Science part of the site. This was also true of the science students who were interviewed.

- There is a strong feeling amongst all members of this audience that users have to be certain about what they post. Users did not want to risk looking 'stupid'.

…People will think I'm an idiot writing this.

- There is little urge or enticement to leave messages. Often the participants were happy enough to read the messages that had already been posted and were not compelled to leave a message of their own.

- The science students were interested in their own research specializations, however they did not feel qualified to talk about other science topics. People who considered that they were more arts orientated felt intimidated and unable to contribute. They tended to move towards the trivia boards. All Participants thought that users should be 'people who know what they are talking about', some thought that that subjects such as science and history were "too intellectual, over my head".

Opportunities for engagement

- The group recognised that there is an element of information sharing involved in e-dialogue, and that this could be useful as an alternative information source. It was felt that e-dialogue might be a tool used by, *"People who want to get information from people and not books"* or *"People into something very specific."*

- Those who had used e-dialogue before tended to think that other users would be people similar to themselves. Subsequent impressions depended on their own experiences of e-dialogue.
    - Two of the previous users had mainly used university sites before, so they expected to see other academics.
    - Two people thought that users would be people with a specific interest in the site content (which was reinforced by information gained on the surf).
    - Two people raised the point that users would be younger rather than older. One specified *"under 40, maybe older".* Generally within the target audience.

- Some of the participants had used online games before that had the option of dialogue with other players. It was the gaming and competition element that was the more important element of this experience, so that the *"ability to talk to other people is a bonus".*

What works

- People looked for things that they thought might match their general interests. Subjects of interest included things that people recognised, such as specific TV programmes (Top of the Pops, Cult TV). Interviewees who saw themselves as more arts orientated went to the Arts and Culture pages.

- The group looked at subjects that they can form opinions on without having in depth knowledge. For example the legalisation of cannabis as a subject that many people have heard about and formed opinions on.

    Chose this because anyone can have an opinion, it's not knowledge specific. You don't have to know lots.

- Some users were attracted to subject matter that has a high comic or amusement value. These subjects were interesting for the audience because they entertain, rather than being controversial or challenging.

- People note where moderation is or is not in place, often using the content of the site as a good indicator.
    - Two of the three people taken to ePals noted the use of moderation. Both wanted to know who moderates the site, and why, making the assumption that it was because there were children on the site.
    - Where moderation is not in place users commented on the lack of focus and the proliferation of random comments and swearing. This proved to be a barrier to our target audience, who either found it offensive or boring and not stimulating.

What doesn't work

- The target audience has a tendency to avoid things that were not 'aimed at them'. Initial judgements were made according to the titles of different sections, and later at the specific content of the site.

- Titles of pages suggest different things to different people, many of the participants looked at pages thinking they would hold something of interest to them and were disappointed. This has also been evidenced in event evaluation. If an event does not match the visitor's preconception, the whole experience is marred.

- There are negative feelings towards contributing if you don't get a response. Previous users expressed negative feelings about past experiences of using message boards and not getting replies themselves.

- There was a preference for anonymity online. This was evidenced by one of the interviewees' reaction to seeing their name on the message board. The interviewee was annoyed, despite the fact that no one they knew would see. Another said, "I don't like having my name displayed, even though it said it would be".

- Heavy moderation may deter people from leaving messages if there is a delay in posting and viewing a message. However, lack of moderation makes the site open to abuse and therefore less enjoyable. Some participants were concerned about the posting of offensive material. In addition, off topic or not stimulating posts infuriated the participants.

  Some of the messages were two sentences, didn't seem to have a reason to be there. Didn't tell you anything, make you think or want to reply

  There was some difficulty in differentiating between posts. This should always be clear to avoid confusion.

- Some users wanted to have information or facts available about the topics under discussion to enable them to be better informed and more confident about contributing to a discussion.

Appendix J

Evaluation of on-line event discussion boards

Naked Science Evaluation

Online Discussion Boards

November 2003

A qualitative and quantitative evaluation of four online discussion boards:
Telepathy
MMR: an injection of sanity?
Animal or Human Embryos: which should we value more?
Stress
Researcher: Ann Katrin Koester

Key Findings

- Telepathy is the most popular subject as an online dialogue event, closely followed by the MMR discussion. This is reflected in the frequency of contributions in terms of presenting the highest number of messages, users and IP addresses within the given period of time.

- Quantitatively, telepathy is the most popular event, however level and quality of dialogue are higher in the MMR discussion. This event had the highest number of people leaving more than one message. Continue and maximise adding contributions by specialists, as this encourages the public to talk about their experiences, opinions and beliefs.

- Online discussion boards work particularly well when distinct camps of opinion about the subject are present. Three dominant opinions were evident in the MMR discussion, pro triple vaccination, con vaccination and pro single vaccination. These formed the basis for controversy and the subject was discussed from different angles, taking into account or challenging various points of view.

- Online discussions are characterised by contributions from people who feel rather strongly about a subject. Those who are not as emotionally involved will be more reluctant to contribute or overcome barriers to access (minority audiences), as their level of motivation is limited. Consequently subjects have to be sufficiently controversial, challenging and exploratory to a wide audience to generate a successful online discussion.

- Factual questions are not sufficiently controversial to promote discussion, instead exploratory questions should be used, as for instance 'Do stories like this prove…?', 'Are we scared…?' or 'Why do we want to…?'. These qualities were given in the MMR and Telepathy discussion boards, while Stress: How do you relax? Was too factual to promote dialogue.

- Discussion board formats have an impact on the success and number of contributions posted. Two layer formats (page 1: all topics; page 2: comments on a specific theme as part of the topic) as used for the MMR, Telepathy and Stem Cell research discussion boards are user friendly and clearly structured as all comments to a specific subject are found under the same heading (thread).

Recommendations

- Telepathy and MMR are suitable subjects that can be discussed online, however an online facilitator should survey the discussion regularly to prevent long communication gaps and direct the dialogue to look at other/new issues.

- Continue and maximise adding contributions by specialists, as this encourages the public to talk about their experiences, opinions and beliefs. This becomes particularly evident when contributions are added by Science Museum staff, because these tend to be more exploratory or challenging. Consequently more participants are encouraged to participate. (For more information please refer to the results referring to Telepathy.)

- The use of abbreviations such as DPT-HiB; DoH/FSA etc. as part of the MMR discussion caused emotional and intellectual barriers, this is evident in a three month gap before a reply referring to the particular contribution has been sent. Consequently abbreviations ought to be explained by the moderator to open the discussion to other potential audiences. For instance, it is important to open the discussion to those who were not able to attend or view the event, thus questions and discussions have to be conducted in a way that the public knows all the specifics discussed during the event.

- Minority audiences should be encouraged to contribute by reducing barriers and making sure that the discussion board is introduced in a way that the public knows why it is worthwhile to make a contribution. Boards should state what could be achieved through discussion with specialists. Thus would address the vital need of people who want to make a difference but wonder '…who hears my voice' or want to 'make a difference'.

- The high discrepancy between IP addresses of those who have visited the site but left no message and those who actually contributed to the discussion, may be an indication of the following:
  a) physical, emotional or intellectual barriers may prevent easy access.
  b) the dialogue box is not engaging enough and people might loose interest before making a contribution. It might help to highlight that the discussion board will be available for a limited period of time only. This may encourage people to leave messages sooner and more frequently.

- Avoid using subjects like 'Stress, How do you relax?' as an online discussion, because of a lack of controversial issues being present. As an introductory question, it is also too limited in the way people can respond, it does not promote dialogue amongst contributors. Factual questions are not sufficiently controversial to promote discussion, instead exploratory questions should be used, as for instance 'Do stories like this prove…?', 'Are we scared…?' or 'Why do we want to…?'

- Discussion board formats have an impact on the number of contributions made. For MMR and Animal or Human Embryos the first page of the discussion board lists the different threads to be clicked on as a link in order to join the discussion (each thread is a new layer). Consequently the user has to scout through the different layers before being familiarised with the subject by which time there may be considerable reluctance to contribute. A single, or maximum two layer format appears much more accessible for example, Telepathy (2 layers) or Face transplant - a recent DC discussion board (1 layer).

Introduction

This report is an evaluation of four online discussion boards, which identifies how successful they were, what encouraged dialogue and what the barriers to successful dialogue were.
The following are the discussion boards topics:

- Stress – How do you relax?
- Telepathy, Fraud or Fact?
- The Price of MMR
- Stem Cell Research – Animal or Human Embryos, which should value more?

The discussion boards are part of a series of events (Naked Science) for adults, based around scientific issues that affect our everyday life. These events were run both on and off-line with an online discussion board each for the public to contribute, during and after the event.

The evaluation of online discussions is based on a range of indicators of dialogue. These criteria enable an evaluation of the level/quality of dialogue that is occurring, and assist in assessing possible barriers (emotional, intellectual, physical) to successful dialogue.

The identification of barriers to online discussions is not without bias. Due to the nature of virtual activities there is no actual evidence of what specific barriers might be, however they are assumed to include the following:

- A complicated registration process (Intellectual barriers)
- Lengthy registration process (physical barriers, as it may be annoying/not comfortable with it)
- Discussion questions to encourage contributions may be inappropriate, confusing, indifferent, etc. (Emotional/social barriers).

There are two possible reasons as to why people participated in the discussion:

- participants have overcome some of the barriers or did not experience any (this depends on the individual's computer skills).
- participants are likely to be personally/emotionally involved/affected by the topic discussed, thus are sufficiently encouraged to overcome any possible barriers and contribute to the discussion.

Methodology

Data collection for the evaluation of the discussion boards consists of two stages as listed below:

1. Quantitative Evaluation:
   a) Number of IP addresses: number of people who have visited the event website. This includes everyone irrespective of whether a message has been left or not.
   b) Number of users: number of people who have actually contributed to the discussion board.
   c) Number of messages: number of messages left on the discussion board.
      Note: users may leave more than one message; this explains the discrepancy of no. of users and messages left.
   d) Dates of first and last message contributed to the discussion, to establish a picture of frequency of messages contributed.
   e) Number of people who left more than one message, this may be an indication

of strong emotional involvement reflected in the debate/dialogue occurring.

2. Qualitative Evaluation
   Each discussion board was evaluated by measuring content and structure of the discussion against indicators of dialogue to establish success, level and quality of the dialogue event.

Results

Quantitative evaluation

Table 1 details the results of the quantitative evaluation of all four discussion boards

	MMR	Animal and Human Embryos	Telepathy	Stress
No. of IP Addresses	572	363	196	unknown
No. of Users	29	28	16	30
No. of Messages	33	14	20	32
No. of Threads	11	6	5	unknown
No. of Repeat Users/ No. of contributions	3 users: <1message 1 user: 5 messages	3 users: < 1 messages	1 user: 4 messages 2 users: 3 messages	2 users: 2/3 messages
Frequency of contributions	1 message/week	0.5 messages/week	1.7 messages/week	unknown
First message	15.1.2003	11.2.2003	8.7.2003	unknown
Last message	25.9.2003	21.9.2003	24.9.2003	unknown

Qualitative evaluation

1. **Telepathy**

What went well
● this discussion board succeeds in generating dialogue, evident in questions and answers complementing one another as well as new topics being explored. Ideas and beliefs are expressed with emotion, e.g.

Person A*: "we are scared and intrigued, because of our lack of understanding of spiritual things(…)"*
Person B: *"No, I don't think we are scared of all the supernatural…"*

● out of the four discussion boards this subject has had the most contributions within the shortest period of time. However, numbers are still low, evident in an average of 1.7 messages a week (20 messages within 12 weeks), presenting an inconsistent stream of information.

- the discussion board consists of 7 different threads (different angles of attitude/opinion to the subject):
  - "Maybe the Matrix had it right?"
  - "True or Not?"
  - "Do stories like these prove telepathy exists?"
  - "Are we scared of the supernatural?"
  - "Telepathy"
  - "Why do people want to believe?"
  - "Am a believer"

  The most popular thread with most contributions is *Are we scared of the supernatural?"* The least popular threads with only one or two contributions are *Am a believer"* and *Maybe the Matrix had it right".* Threads initiated by Science Museum staff are generally more popular, because the opening contribution tends to be more exploratory or challenging, thus encouraging more people to participate. These threads consequently show a higher frequency and number of contributions.

- Overall there were no observable physical, emotional or intellectual barriers to the discussion board. It was clear that contributors were engaged with the subject as their opinion was expressed and questions asked in a predominantly challenging, exploratory or rhetorical way. Contributors appeared to understand all issues raised.

What needs to be improved
- Distinct camps of opinion can be detected in this discussion board (e.g. believers and not believers). With some more encouragement from the moderator (e.g. challenging questions) the discussion could be increased to flow more easily, explore new spheres and point out new/different views.

- An average of 1.7 messages a week is very low, pointing at a slowly flowing dialogue. Encouragement through the moderator and the introduction of new threads may assist in improving this.

- slow flow of dialogue and generally a low number of messages in relation to the length of discussion may indicate that barriers are present. These may be physical, emotional or intellectual (e.g. registration, confusing navigation, slow responses).

2. MMR: An Injection of Sanity?

What went well
- indicators of dialogue are present in the MMR online discussion. People are emotionally engaged evident in questions being primarily rhetorical and challenging, trying to make a point and convince others of a particular opinion.
- The discussion generates varied/new information, often challenging views of others.
- Having specialists' opinion/information is positive. People feel they are taken seriously and controversial dialogue is promoted simultaneously.
- Science Museum staff contribute frequently, introducing new topics and thoughts, this works well in order to get responses from the public.
- Contributions primarily originate from parents and those interested in health issues/policies. This means having an motivated audience assist flow and frequency of the discussion/contributions.
- 33 messages were contributed to the discussion board, four users left more than one message.
- the debate consists of 11 different threads, indicating a wide variety of issues around the subject to be of public interest for discussion.

What needs to be improved
- the frequency of messages contributed to the discussion within the given period of time is low (approximately 1 message per week over a period of 8.5 months).
- although the discussion board consists of 11 threads, some are dominated by science museum contributions, e.g. *"Contradictions"* with a total of six messages of which only two are contributions by the public.
- the use of abbreviations increased intellectual barriers and should be explained by the moderator e.g. DPT-HiB; DoH/FSA etc.

3. Animal or Human Embryos: which should we value more?

What went well
- distinct camps of opinion are represented in the discussion (pro and con stem cell research) encouraging a controversial debate.
- Communication reflects an exchange of opinions, beliefs and feelings and shows evidence that participants are identifying with other people:
  "I have to agree with C., no matter how much you hate animal research, to erase disease, you have to continue the tests. It is unfortunate, but it is the only way. I disagree with L. that animals aren't evil they have a "natural instinct" yes, but they too kill for fun, and they too die of disease. If we can erase disease, than the animal too will also be disease free."
- All contributions express strong feelings about specific aspects, indicating that an interest group has been reached.
- the discussion board consists of six different threads indicating a rich subject area that allows expansion of different views/aspects.

What needs to be improved
- target new audiences and challenge opinions of independent people outside specialist interest groups.
- frequency of contributions is low, an average of only 0.5 messages were left per week (14 messages in $7^1/_2$ months)

- A total of 28 users had registered and logged on to the discussion board, only 14 people actually made a contribution, this indicates that barriers are present or the content not engaging enough for a large percentage of the public.
- one of six threads, containing one message, is of unrelated content ("*Is Psychology a Science?*").

4. Stress

What went well
- Participants who contributed to the discussion board seem comfortable with format, usability and content.
- the discussion is light-hearted in tone and contributors predominantly report about their experiences, methods and ways practiced to unwind.
- contributors include pupils, students and an adult audience, which indicates a representative range of people has participated in this online debate.

What needs to be improved
- This discussion board does not meet the requirements of what has been defined as online dialogue. Contributions are primarily statements, reports and personal anecdotes about how individuals relax, what they like or hate. Although emotions are evident in opinions expressed, other indicators of dialogue are not sufficiently represented. There are no questions and answers, thematic follow-ups or identification with one another; contributors seldom refer to points made by others. This subject is not suitable for a dialogue event as it is not of a sufficiently controversial nature.

- The following is the opening question to the discussion board:
  "How do you relax? - Here is a bulletin board where you can let us know how you relax or read other people's tips.
    o Question and introduction are encouraging for people to talk about their own experiences, however the question is too 'closed' in order to encourage real dialogue.
    o Phrases such as "*…let us know…*" may be misleading in terms of raising expectations that cannot be fulfilled. Thus participants may think they will receive comments or recommendations in response to their contributions by specialists. The only advice provided is contact details for the Samaritans, a Science Museum contribution.

- the online discussion board consists of 32 messages contributed by 30 individuals, two of who have left more than one comment.
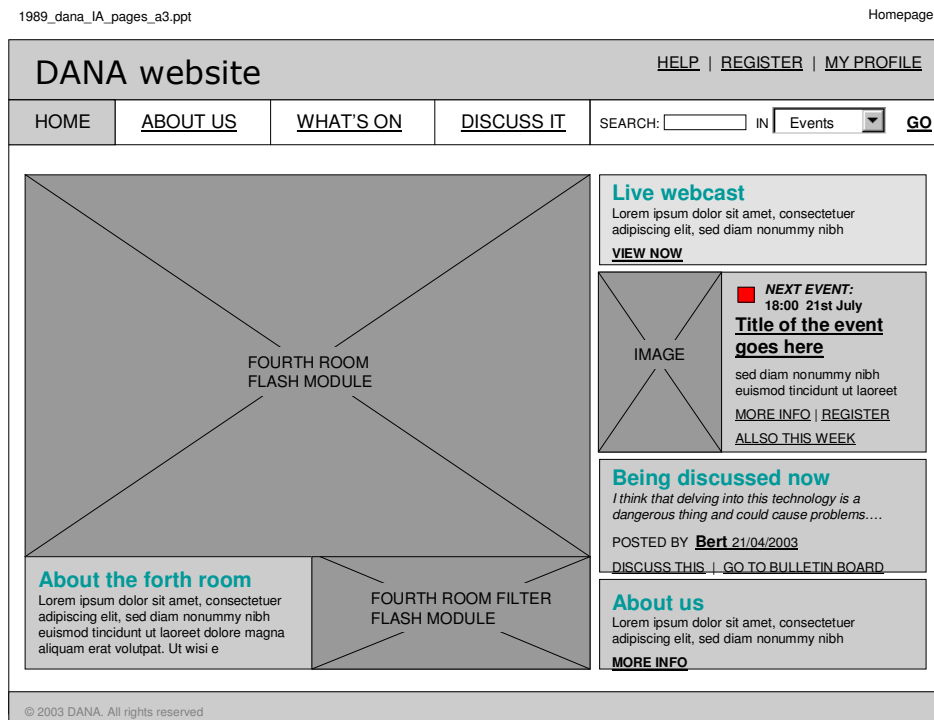
Evaluation report

Dana Centre website bare wire frames (prototype 1)

part 1
(home page, 'about us' and 'what's on' pages)

1989_dana_IA_pages_a3.ppt   Homepage

DANA website			HELP	REGISTER	MY PROFILE
HOME	ABOUT US	WHAT'S ON	DISCUSS IT

SEARCH: [_____] IN [Events ▼] **GO**

FOURTH ROOM
FLASH MODULE

Live webcast
Lorem ipsum dolor sit amet, consectetuer
adipiscing elit, sed diam nonummy nibh
VIEW NOW

IMAGE

NEXT EVENT:
18:00 21st July
**Title of the event
goes here**

sed diam nonummy nibh
euismod tincidunt ut laoreet
MORE INFO | REGISTER
ALLSO THIS WEEK

Being discussed now
*I think that delving into this technology is a
dangerous thing and could cause problems....*
POSTED BY **Bert** 21/04/2003
DISCUSS THIS | GO TO BULLETIN BOARD

About the forth room
Lorem ipsum dolor sit amet, consectetuer
adipiscing elit, sed diam nonummy nibh
euismod tincidunt ut laoreet dolore magna
aliquam erat volutpat. Ut wisi e

FOURTH ROOM FILTER
FLASH MODULE

About us
Lorem ipsum dolor sit amet, consectetuer
adipiscing elit, sed diam nonummy nibh
MORE INFO

'Home page', 'About us' and 'What's on' pages

Summary

• **The titles and headings for each page are critical in determining the users' understanding of the page. This means that even if a page looks simple, it will not be understood if the headings and titles are unclear. Ambiguity must be removed from all the titles so that they do not present a barrier to engagement.**

• **The submenu beneath the main toolbar is too subtle. Is this for navigation or does it act as a breadcrumb?**

• **The calendar key is not currently obvious to the users. In addition, its relationship to the calendar itself should be made more explicit to minimise confusion.**

Homepage

• **At the moment, this page does not have a strong enough identity for users to understand what it is about. This may be provided with the fourth room graphic and overall design, however we must ensure that other areas of the page are clear and in support of this understanding. One solution to this might include using the tagline 'Talk Science' with the title 'Dana'.**

• **Maintain the clarity of the toolbar on this page. People will use this for navigation.**

Reactions to this page were initially confused. They tried to link it to the Museum, which implies that there is not a strong identity associated with this page itself.

In trying to find out more about the site, users chose a variety of options. These included: about us what's on and the fourth room . The majority chose to search through the toolbar.

Users found it easier to search for an event. 4 people chose the 'Next event' box on the right hand side, and there were a further 2 mentions of the 'What's on' button on the toolbar

Users did move around the page, locating the options of web cast, events, discussion, and what's on.

All the users understood the meaning of the different sections on this page. Worth noting are expectations of the fourth room box on the bottom left of the page. All agreed that this box would provide an explanation of 'The Fourth Room'.

About us

• **People understood that this page was an introduction, but not what it is introducing.**

• **The titles, The Dana story' and 'Introduction' are confusing. These should be distinguished from each other.**

4/5 people thought that this page was an introduction to Dana. Out of this group 3 people thought this would be an introduction to the building and 1 person thought it was an introduction to the web site.

There was some confusion over the combination of 'the Dana story' and 'Introduction'. It is not clear how these sections are different.

Navigation from this page to an event did not present any problems. People would use either the 'Next Event' box on the right hand side, or the 'What's on' button on the toolbar.

The Dana story

- **As with other pages on the site, people did not use the line beneath the toolbar. This needs to be both more visible, and to have a more obvious function.**

- **Continue using the title 'The Dana story'. This was understood by the users.**

Expectations for this page were that it would be about what Dana is and its history. This suggests that people had understood the title of the page and what it is about.

When asked to navigate from here to the previous page (without the back button) there was some uncertainty. People were not sure of where they were on the site, and what the previous page had been. Only one person chose the 'overview' button (under the top toolbar), and another person specifically mentioned that they found this section confusing.

What's on

- **The calendar key should be reviewed. If people are to use this function, it must be more prominent and have an unambiguous relationship to the calendar itself.**

Users understood that this was a page on which they could find out about what events were on.

4 people used the 'up and coming events' section to find out about events. Only 2 people noticed the calendar as a way of finding out about events.

When prompted to use the calendar, the majority did not understand how to use the key, and some users preferred to get information about events by clicking on dates in the calendar itself.

Event display

- **The 'register' button needs to be reconsidered. This should either be explained, or another word could be used.**

- **Maintain the clarity of the other sections on this page. Users understood that these sections would provide more information about the event.**

Users understood the purpose and most of the different functions of this page. However, the 'register' button was not understood by all. It is not obvious to users what they are registering for. Is it to go and see the event, or to leave a comment?
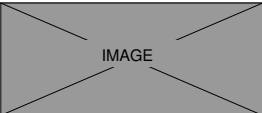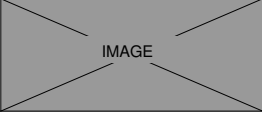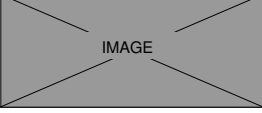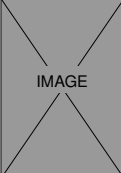
Evaluation report

Dana Centre website bare wire frames (prototype 1)

part 2
('discuss it' pages)

DANA website

HELP | REGISTER | MY PROFILE

| HOME | ABOUT US | WHAT'S ON | DISCUSS IT | SEARCH: | IN Events | GO |

>**Overview** | Bulletin Board | Polls | Search

Introduction
Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

Live webcast
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VIEW NOW

The Bulletin Board
Lorem ipsum dolor sit amet, adipiscing elit, sed diam nonummy nibh euismod tincidunt
MORE INFO

IMAGE

IMAGE

NEXT EVENT:
18:00 21st July
Title of the event goes here

sed diam nonummy nibh euismod tincidunt ut laoreet
MORE INFO | REGISTER
ALLSO THIS WEEK

Polls
Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt
MORE INFO

IMAGE

Whats on
Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh
MORE INFO

Search
Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt
MORE INFO

IMAGE

Being discussed now
I think that delving into this technology is a dangerous thing and could cause problems….
POSTED BY **Bert** 21/04/2003
DISCUSS THIS | GO TO BULLETIN BOARD

These discussions on your site
Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh
MORE INFO

211

Discuss it **pages**

Summary

- **Reactions to these pages were initially confused. With time, users understood how to use these pages and what the content was. However, the time taken for them to engage poses a large threat to engagement. We must ensure that the pages are immediately comprehensible and appealing to our users.**

- **Page titles and functions are not obvious to users. They must be clearly visible and distinguished from other areas of the page to avoid misunderstanding.**

- **The submenu beneath the main toolbar is too subtle. Is this for navigation or does it act as a breadcrumb?**

- **The boxes on the right hand side of these pages were noticed as a continuing feature. People *would* use these for navigation and information. However, bearing in mind that this could be a key navigational area the titles must be especially clear in this area so that it is not confusing for users.**

Discuss it

- **This page needs to have a clearer title and identity.**

Initial reactions to this page were confused. Its purpose was not immediately obvious to users.

With further inspection 3 / 5 users understood that there were a number of options available to them on this page. However, only one person specifically mentioned the word 'discuss'. Other people focussed on using this page to find out about what is happening in Dana.

When asked to navigate around this page, all the users were correctly able to identify at least one place where they would find comments left by other users. (bulletin board and being discussed now)

Bulletin board

- **This page must have a clearer title.**
- **The sub-heading 'My Topics' must be reconsidered.**

Only 1/5 people asked were correctly able to label this page as the bulletin board.

Nearly all the topic headings themselves were understood by the users. This includes the heading 'Everything Else' which users understood to represent a miscellaneous page of the site.

The only exception to this is the heading 'My Topics' which caused confusion for some people. There were five different responses to this heading – none of which had the same interpretation.

<u>Description</u>

- **The subheading 'these discussions on your site' must be reconsidered**

The one area of confusion of this page lies in 'these discussions on your site'. None of the users understood the meaning of this phrase.

However, the overall interpretation of this page was not problematic. People understood both that it was about the environment, and that this was a discussion page.

<u>Topic</u>
- **The links to 'Dr Doom' and 'Benjamin' are confusing. These should be more prominent and more self-explanatory.**
- **The 'post reply' button was clear and understood by all users.**
- **Overall, the toolbar beneath the comments section was understood by users, however we should beware of the potential for this to become confusing.**

The top box ('Event Discussion') caused some misunderstandings. It is unclear to users what will happen if they click on 'Dr Doom' or 'Benjamin' that is written in this box. 2 people thought it would give you Dr Doom's comment. 2 people thought it would give you his profile, and 1 person thought that this button would provide an email link to Dr Doom.

4 / 5 users chose 'post reply' as the way to answer to a comment. The fifth person chose the 'mail' button on the toolbar beneath the comments. The purpose of the 'mail' button must be made explicit so people know who the mail is to.

All users correctly located and identified the 'profile' button on this toolbar.

<u>Profile (public)</u>
- **Users' profiles must be clearly distinguished from users' comments. This might be achieved by a difference in their visual identity, or by clearly labelling the relevant parts of the site.**

3 / 5 people thought that this page was Dr Doom's profile
2 / 5 people thought that this page was a topic started by Dr Doom

The 'last post' section was confusing for users. 3 / 5 users identified this section as containing a post – but not Dr Doom's. 2 / 5 users did not know what this section of the page was for.

'Post History' was clearer, in that 4 / 5 people thought that this section contained previous posts. However, only 1 of these people made a specific connection to Dr Doom. One person did not know what this section of the page was for.

'Topic titles' under the section 'Post History' were understood by the majority of users. However, one person thought that this section would link to another user's profile, and one person thought it would provide a topic *and* a profile. This indicates some confusion over the difference between comments and profiles as they are depicted on the site.

<u>Register</u>

• **This page did not present any immediate problems, however there may be some barriers to the use of the 'Keywords' section.**

Overall, people understood how they could use this page. Only one person was confused by the crosses (should the box be checked or un-checked to let the information go public?).

4 / 5 users thought that 'Keywords' was a search function
1 / 5 users thought that 'Keywords' was to find other people with similar interests. This section of the page did not present a problem for the majority of users. However, it is worth noting that the language used to describe 'Keywords' implied that these people would not choose to use this section themselves.

<u>Profile (edit)</u>
All users understood the purpose of this page.

Evaluation Report

Dana Centre website

prototype 2

Recommendations

- Continue using the Dana Centre logo and strap-line to identify the homepage. However we should ensure that the strap-line animation stops on the correct wording (talk science) to complete the strap-line, or that it continues moving for the whole time users are on the home page. Currently, the animation stops on 'weird science' which was misleading for some users.

- Users reacted positively to the 4th room, and understood the *basic* function of this animation. However, more testing should be included as the 4th room progresses to ensure its other functions are understood and that users are motivated to use it.

- Ensure that users know they can click on the DC logo to return to the homepage throughout the site, by using the hand icon when the mouse hovers over the logo. During testing, users attempted to navigate in this way but thought it was not possible when the icon did not appear.

- Continue using the toolbar design. Users understood how to use the toolbar. It had become central to their navigation.

- Alter the orange strip to emphasise its functions. For example, titles could be stronger in their design. Users did not show a good understanding of this strip, and did not seem motivated to use it.

- Change the underlined topics on the calendar page, (eg. science in general) so that they link to a list of discussions under that topic. The overall design of the calendar should not change however, as people found it easy to use.

- On the profile page users did not understand the titles, 'last post' and 'post history'. These should be changed to more accurately describe their content. (Eg. Bert's last post / User's last post?)

- On the discussion board page (all discussion on this prototype was under science in general) the titles 'topic starter' and 'last posted' are misleading. These currently link to the profile page. This should be changed so that *either* they link to the first and last comments, *or* their titles should be changed for easy identification. (Eg. Starter's profile?)

- Whilst users found the overall design and layout easy to use, they also commented that it was not very exciting. If we want the website to echo the ground breaking ethos of the Dana Centre, we would need to make the design more striking and original.

Introduction
This report represents the second and final of formative tests for the Dana Centre website. Summative testing will follow after the site is launched.

Methodology
The website itself was split over 2 samples (because the amount of content was so large), and a total of 14 interviewees from the target audience were selected to take part (independent adults ages 18-45). Users were asked to look at particular pages of the website and answered a series of questions about them. Questions 1-4 and 12-16 were asked of both groups (14 people) Questions 5-12 asked of one group (7 people).

Results

Homepage

• Nearly all the users were able to identify 'Dana Centre' as the title of this page when asked.
• Just under half the users specifically mentioned the strap line at this stage.
• Most users quickly understood that this site would be about science.
• Just under half of the users understood that there would be a physical building associated with the site.
• The strap-line animation currently stops moving on the phrase 'weird science' which was misleading for some users.

12/14 thought the page title was Dana Centre. Of these, 5 mentioned the strap line as well as the title. (Dana Centre weird science)
1 person thought the page title was 'weird science'
1 person thought the page title was 'introduction'

Users correctly identified *at least some* of the content of the site from the homepage
   • 4 said a combination of science / centre / events
   • 5 only said science
   • 2 only said a centre
   • 2 said MMR
   • 1 didn't know

4ᵗʰ room

• **The significant majority of users understood that they could hear opinions, or add their own comments on the 4ᵗʰ room**
• **Exactly half of the users thought that this part of the site was about MMR (the current discussion topic on this section)**
• **About half of the users spontaneously clicked on the 4ᵗʰ room animation**

11/14 understood this part of the page was about debate and people's opinions
7/14 stated that this section was about MMR
2/14 thought they could get more information from this part
2/14 were not able to say what this part of the site was about

Toolbar

- **Users understood the toolbar and were able to use it for navigation**
- **The 'My Dana' section caused minimal confusion for our target audience**

Only 2/7 people were confused by the title 'My Dana'
3/7 people thought that this section was to register on the site
3/7 people went as far as saying this section would allow a personalisation of the site.

7/7 understood 'about us' to be about the centre
5/7 understood that 'discuss' would allow them to discuss or read discussions
6/7 understood that 'what's on' related to current events

Event navigation

- Most users were able to find at least one place to get more information on a forthcoming event.
- When asked to look for other events in the month, the majority of people choose to search using the calendar in the orange boxes. (note that users were already at the bottom of the page from previous question)
- About half either used the toolbar on its own or as well as the calendar.

5/7 were able to choose more than one method of looking for an event (when prompted):
- 6 people choose to search via the toolbar
- 4 used the orange strip
- 2 used the search button

5/7 were able to choose more than one method of looking for other events in the month (when prompted):
- 6 mentioned the calendar
- 5 mentioned toolbar
- 1 mentioned the search button

Next event

- Users understood that this page provided opportunities for discussion.
- Users understood that clicking on the speaker's names would give them more information; biographical and opinion based.

6/7 mentioned that they could discuss on this page.
5/7 listed 2 or more things that they could do on this page.

6/7 thought they would find personal information about the speakers.
4/7 also thought they would find information about the speaker's opinions
4/7 mentioned more than one type of information that they would get from clicking on the speaker's names.

1 person thought that they would get a video of the speaker's opinions (like Tell talking heads)

Calendar

- Most users understood the calendar and were able to find more than one way of using it.
- However, the subject headings above the calendar itself are misleading. All users expected these to link to events associated with the topic (and not a discussion board)

5 /7 found 2 ways to use the calendar (when prompted)
4/7 thought that 'science in general' would give them a list of events for that topic (currently links to a discussion board)
2/7 related 'science in general' to a particular event. They thought that this was the title of the event for 12th August, matching the colours on the calendar and the list above.

Bulletin board

- All users understood the function of this page

Discussion board introduction

- No users thought the links from 'topic starter' and 'last posted' would lead to the author's profile.

All users thought that the 'discussion' link would lead to the discussion itself
4/7 thought 'topic starter' would lead to the first post on that topic (currently links to Bert's profile)
5/7 thought that 'last post' would lead to the most recent post on that discussion board. (Currently links to Bert's profile)

Profile page

- Once on this page, the majority of users understood that it would give them more information about Bert.
- The majority also associated this page with discussion.
- However, the 'last post' and 'post history' buttons were unclear. People did not understand where these would link to and what their content would be.

4/7 people thought this page would allow them to find out more about Bert
5/7 people thought this page would give the possibility of discussion
4/7 stated (unprompted) that they found the layout easy to follow

Only 1/7 understood that 'last post' was about what Bert had last said
Only 1/7 understood that 'post history' was Bert's posting history
4/7 thought that 'post history' was related to the history of that particular discussion topic (Telepathy)

Orange strip

- Users did not pay much attention to the orange boxes on this page
- When asked about the boxes, the audience were split in their responses.

5/14 people were able to identify more than one use for the orange strip:
- 10 thought it related to events

- 6 thought it would provide additional information
- 3 related it to debates

1 person thought that each of the oranges boxes represented a different event.

Reactions to the site

- Users commented that they found the layout easy to use.
- Whilst users said they liked the site, it did not provoke any strong reactions whether positive or negative.

"Its not outstanding. Its ok but doesn't stand out" (questionnaire respondent)

"It seems a bit plain." (questionnaire respondent)

Target audience

- Just over half of the users thought that this site would appeal to people who already have an interest in science
- The majority of those asked implied that the site would appeal to adults
- No users thought that the site would appeal to children
- Reasons for this were evenly split between the content and the layout.

8/14 thought the site would appeal to people interested in science
10/14 thought the site would interest adults, including 3/14 who specifically mentioned students or people doing research.
Nobody thought the site would interest children and 4/14 specifically said NOT children.
Reasons given for how people formed their impressions of the site related to content (8/14) and design (5/14); with some stating both.

Evaluation Report

Dana Centre Website Prototyping
'Event DIY' section
(guidelines for conducting and evaluating Dana events)

Ann Katrin Köster
October 2003

Recommendations

Venue: (Level 1)
• clarify that the events can take place at any venue.

Layout: (Level 1-3)
• change background colour or have faded picture in background

Background Information:
(Level 1)
• add a brief general introduction as to why dialogue events are desirable and why scientists should envisage running them. (this could also be added to the main introduction on page 1/ level 1)

(Level 3): *"What makes an Effective Event" and "Controversy" Documents*
• introduce shorter paragraphs/ bullet points and links

Objectives Doc:
(Level 2)
• Text should emphasise the importance of this document to the planning process. Mention or have links to "Evaluation"

(Level 3)
• Give more detailed advice for some parts of this document. For example, marketing, advertising and filming. This could be achieved either by further explanations within the resource, or by introducing links to relevant external resources.

• Include links to 'Background information', to read up on how to mediate between speakers or prevent one particular person from leading the debate.

Online Content: (Level 2)
• Change title to e.g. 'web content' and clarify why relevant.

Evaluation: (Level 3)
• Highlight that this should also be considered before the event
• Introduce links to the 'Objectives Document' and/or 'Background Information'

• 'Observe Your Event': introduce shorter paragraphs/ bullet points and links; explain observation sheet example.

Word/pdf. files
• Consider having pdf/word files available in addition to printable versions.

Optional
• Introduce links for information on: IPR (Intellectual Property Right); Copyright; Patents; Site Map

Introduction

The new Dana Centre website publicly offers a resource on how to plan, run and evaluate science dialogue events. This report is a summary of results deriving from testing the resource for its usability and content on 10 scientists, aged 18-45, who are representative of the target audience. The report provides recommendations for possible changes and improvements.

Methodology

Ten scientists were tested individually for approximately 45min.
There were three phases to the questionnaire:

- General questions about first impression prior to browsing through the resource
- Task: approximately 10min. free time to independently explore the resource. Observation concentrated on how the person went through the documents, which elements received most attention and what appeared as possible barriers.
- Post Task: questions were asked about specific elements of the resource to identify possible problems.

The purpose of the testing was to evaluate the usability, content, understanding and navigation of the website as well as participants motivation to use the resource. The test results will be utilized to improve the resource for future users.

Key Findings

All key findings are summarised according to the categories of understanding, motivation and navigation.

Understanding

- There were no barriers in terms of understanding the purpose of the resource.

- The majority expressed that the resource offers constructive advice,
- communicates issues clearly, and appears interesting and informative.

- Documents available under 'Plan Your Event' were most popular because of
- their conciseness and practical qualities.

- The information provided under 'Background Information' was experienced as very important and useful

- After exploring the resource about half of the participants are still not sure whether their event is bound to Dana or whether it can take place anywhere.

- Half the participants initially concentrated on the left side of the screen (general information on DC and forthcoming events), suggesting that the main page needs some visual improvements to stand out more.

- Only about half the participants were aware that 'focus groups' could also take place before the event.

- A small number of people (x/10) were not entirely sure what the purpose of the "Objectives Document" is and how it should be used.

- The majority (7/10) of people did not understand the title "Online Content". This needs to be clarified to explain what and why content can be put online.

- about a third (3/10) of the participants were not aware that Evaluation may be relevant before the event takes place

- The majority could not make sense of the observation sheet example (in terms of use and what it is) in the "Observe Your Event".

Motivation

- The majority of participants were surprised by the content of the Background Information section.

- Users had expected a general introduction under Background Information stating why dialogue events are desirable and why scientist should envisage running them.

- the majority (8/10) felt that the resource is aimed at more senior scientists,
- professors, communicators or post doctoral scientists. Two participants felt
- somewhat daunted as it appears like a large scale project, for which they
- might not have time and were unsure about how they would benefit from it.

- about two thirds of the participants where not sure why they should attempt
- organising a science dialogue event, as opposed to participating in it.

- only two people understood that the resource is aimed at anyone who wants to
- organise a dialogue event, including those without experience.

- The majority of people were unsure about how to approach marketing, advertising and filming strategies, and about how to find the right audience.

- the majority of people expressed that some of the documents (i.e. 'What makes an Effective Event' and 'Controversy' Documents) are too long. Shorter paragraphs, bullet points and links would be preferred instead of scrolling through a long document.

- half of the group seemed concerned about how to mediate between speakers or prevent a dominant participant from leading the discussion (two people stated that this is because scientist are not familiar with communicative techniques).

- two thirds expressed that the text and paragraphs in the "Observe Your Event" document are too long and look like an Introduction to the bullet points further below.

- about two thirds of the participants would prefer pdf./word files to printable documents, because it would enable them to use files straight away, by either adjusting them to their particular requirements or filling them in.

Navigation

- No problems occurred when trying to get around the site, most participants highlighted that navigation is easy and very clearly structured, due to a low number (3) of layered/linked information.

- Keep number of layers low, however extra links may be advantageous in places (see recommendations).

- A site map was mentioned as a possible asset because it would allow a general
- overview and may enable the user to be more selective in choosing the
- documents that appeal most.

NOTE:
specific results suggesting the requirement for changes or adjustments are listed under recommendations (p. 3).

Evaluation report: part 1

Dana Centre event training course:
How to Run and Evaluate Dialogue Events

November 2003

Course developed by Annie Devitt

Evaluated by Brookie Fraser Jenkins
and Ann Katrin Koester

"Its made me really enthusiastic for organising events…" (course participant)

Recommendations

- Overall this course was highly successful. It was enjoyable for participants who felt that is was both informative and practical. It would be appropriate to run the course in future both as an internal training and for other science communicators.
- The course felt rushed due to the volume of content, making it difficult for both participants and staff. If possible, the course should be extended to last for 2 days.
- Continue using group exercises in the morning sessions. These were very popular, particularly the sessions using group exercises to develop event content and planning.
- Continue introducing the course with examples of previous Dana events. This was well received and useful as a tool to outline the volume of work that Dana has achieved. However, this session was rather long and could be shortened if more time is needed on the course.
- Continue using the Launch Pad show as an observation exercise. This proved to be an enjoyable way of examining evaluation techniques. After the show is finished, the session should be expanded to allow participants more time to discuss their experience of observation.
- Afternoon evaluation sessions were felt by participants to be less useful. Although time is short on the course, these sessions need to be developed more to make them as engaging as the morning planning sessions.
  - One way to do this might be to introduce more active exercises that will help make the content as enjoyable as the first part
  - The questionnaire section should be expanded to allow more time for discussion of good / bad questions.
  - After observing the launch pad show, participants need some time to discuss their experience.
- Consider introducing a short section on *why* evaluate to put the afternoon into context.
- If more time is allowed for this course, consider expanding upon practical exercises about facilitating events (e.g. dealing with difficult audience members) BUT NOT at the expense of any other sections of the course.
- Alter the name of the course to place a greater emphasis on planning and evaluation (rather than running and evaluating).

<u>Introduction</u>

This course is part of a set of resources to disseminate information about planning, running, and evaluating dialogue events, in accordance with the Wellcome Trust contract for the Dana Centre. The course was attended by both Science Museum staff and Natural History Museum staff, and was the first time that the course had been run. The participants had a mixed experience of events; some having run events before and others with no experience in this field. The course was developed and run by Annie Devitt, Training Manager to the Explainer Unit. In total, 10 people attended the course and it took place in the Fellows Room at the Science Museum. As a result of learning from this initial evaluation, the course was slightly altered and was repeated with participants invited by the Wellcome Trust in May 2004 (see evaluation report part 2 below).

<u>Course outline</u>

The following is an outline of the course components. The same programme was used even though the course was run as both a one-day and a two-day course with individual elements expanded or contracted.

Understanding what makes a successful dialogue event

- Choosing a venue
- Ways to publicize
- Choosing your speakers
- Scenarios

How to plan a dialogue event

- Candidates will plan an event following an A-Z guide throughout the day
- Choosing your audience
- Researching, selecting themes, writing summaries
- Choosing a format
- Aims and objectives

Presenting events

- Looking at the role of host / facilitator / chairperson
- How do you do it? - public speaking tips

How to evaluate an event

- The opportunity to evaluate a Science Museum and or / Dana event and then write questionnaire
- Methodologies used - email questionnaires, observations, in-depth interviews, focus groups
- Abraham Maslow

Why evaluation is important

- What will a successful event look like
- Collecting data
- Processing data
- What to do next!

Methodology

Two sets of detailed observation notes were taken throughout the course, and participants were asked to complete a short questionnaire at the end of the course.

What went well

"You must do it (the course) before you try to plan a Dana event or it will be a nightmare!" (course participant)

- Overall this course was highly successful. It was enjoyable for participants who felt that is was both informative and practical.
- Both participants who had previous experience of running events and those who had NO previous experience rated the course very highly. It has proven to be successful at targeting both of these groups.
- Overall there were no observable physical, emotional or intellectual barriers to the course. Participants were at ease, and appeared to understand all explanations. The course was clear, well structured and practical.
- Participants enjoyed the opportunity to meet and talk with other people who are running dialogue events. This was clearly one of the course's strengths.
- Participants particularly enjoyed the morning sessions, and found these to be the most useful.
- The group exercises on planning events (using the event template) proved a successful and popular method of engaging participants in the content.
- The initial exercise was an effective and fun way of introducing the breadth of knowledge that has been built up from Naked Science events. However, this exercise could be cut shorter if more time is needed.
- Watching a launch pad show was an effective way of getting participants to think about observing events. It was also very entertaining so helping to make the evaluation content more enjoyable.

What could be improved

- Initially, some participants expressed that they would like to know more about *why* they should be interested in dialogue events. The importance of dialogue in the public understanding of science movement could perhaps be made clearer.
- During the afternoon (evaluation section) it became very hard to concentrate. This may be partly due to the packed nature of the course, and partly due to the difference in style between the morning and afternoon. This was also the part of the course that participants felt was the least useful.
- Participants commented that the course felt a bit rushed. Whilst the packed atmosphere has a positive side of covering lots of ground, it would be beneficial for participants and staff if the course could take place over a longer period of time e.g. 2 days.
- The room itself was very cold for most of the course.

Evaluation report: part 2

Dana Centre training course:
How to Plan and Evaluate Dialogue Events

May 2004

Annie Devitt

Recommendations

- Pre-course information with objectives should be sent with all advertising information to prospective candidates

- With such a variety of attendees, it is recommended that a pre-course questionnaire to be sent to interested candidates. This would enable the course leader to have an understanding of why people are attending and how the course can best suit them

- Divide and offer the course as two separate training days
  (1) How to plan a dialogue event
  (2) How to evaluate an event

Introduction

As part of the Wellcome Trust contract with the Dana Centre, the Science Museum was asked to provide a training programme for staff researching, developing and performing contemporary science dialogue events in science centres and other venues, and for scientists (notably Trust-funded scientists) who intend to organise dialogue events. This was the second course run by the Science Museum (see Dana Centre event training evaluation part 1 above).

Eleven people attended the course from a variety of organisations:

-	University College, London
-	Oxford University
-	Imperial College, London
-	Kings College, London
-	Cardiff University
-	Exeter University
-	The Science Museum
-	The National Museum of Film, Photography and Television
-	Deutsche Museum - Germany
-	The Natural History Museum

The course was held over two days at the Dana Centre (in the Wellcome Wolfson Building, London)

What went well

- The course was successful. All candidates commented upon the friendly atmosphere and clear organization over the two days and many candidates commented upon the good choice of venue.

- There were three aspects of the course that the candidates particularly liked.

    - The expertise provided during the course by museum staff who run dialogue events.

    - Opportunities to have group discussions and explore new ideas

> "The way the course enabled me to think differently about ways to get people discussing issues and exploring ideas – sharing ideas"

- Over half the candidates mentioned that they enjoyed the group activities involved in preparing a dialogue event

> *"(The course) was very refreshing and presented new and exciting ideas."*

- All candidates liked the accompanying notes stating they were clearly presented and informative

- All candidates (apart from one) found day one the most rewarding

- All candidates said the course met their expectations, with three saying it exceeded it. The majority of candidates described the course as "clear, interesting and well paced"

- All of the candidates felt the course was a very worthwhile experience and over half said they would definitely recommend the course to colleagues

> *"Do attend; worthwhile experience, facilitator very warm and engaging and keeps course on track"*

> *"A very informative and useful course, especially for first time organisers"*

What could be improved

- Day 2 was not viewed as rewarding as Day 1, candidates felt too much time was spent on evaluation

> *"The evaluation session could have been condensed"*

- A couple of candidates commented that not enough consideration was given to their individual needs, bearing in mind the variety of backgrounds

> *"Not enough consideration of where we were all coming from, i.e. what we hoped to get out of it, how we might apply any of it to our own situations. Not geared towards Scientists."*

Methodology

Candidates were asked to complete a short questionnaire at the end of the course. As these were collected before participants left, there was a 100% response rate.

Summary

Recommendations listed above will be put into place should this course be repeated.