

The Dana Centre Audience Research

2004-2005

“Innovative, open and non-intimidating to non-science members of the public”



Elin Simonsson
Visitor Research Group
Science Museum
August 2005



SUMMARY

This report contains the findings from the Dana Audience research conducted by the Visitor Research Group during the period September 2004 to July 2005. It summarises the findings from the audience profile survey, event evaluation and work conducted with the Dana Centre audience panel.

Key findings from audience research 2004-2005

- Visitors' overall reactions to the Dana Centre venue and events are very positive.

"The Dana Centre is amazing. It pulls together science and the public"

Focus group participant

- The people who attended events at the Dana Centre are not exclusively science professionals, but have a variety of occupational backgrounds including art and design. Overall, half of all visitors to Dana Centre events had occupations that were not directly related to science, technology or medicine.
- Minority ethnic groups are underrepresented in the Dana Centre audience, which is 88.6% white, a similar figure to the Science Museum (84.3% white). In comparison, the population of Inner London is 65.7% white (2001 Census figures). However, events aimed at ethnic minority groups were successful in attracting their intended audience.
- The majority (81%) of visitors to Dana Centre events fall within the target age range of 18-45. Nearly all of the remaining 19% fall into older age categories.
- Over one third (38.5%) of the visitors sampled during this survey period were repeat visitors, having previously visited an event at the Dana Centre.
- Overall, Dana Centre events attract a relatively equal number of women (53.7%) and men (46.3%). However, the gender balance can differ between individual events depending on event topic.
- Visitors to Dana Centre events are more likely to frequently attend art related activities/venues than they are to attend Science Centres/Museums or public debates.
- Visitors to the Dana Centre website are mainly resident in the UK, and of these 4/5 are resident in the London and South East area. Interestingly, when looking at the reasons people are visiting the Dana Centre website, most are going for a reason related to making a visit to the physical space.
- Information from event evaluation shows that many visitors to Dana Centre events associate science events with lectures. They are pleasantly surprised to find an informal and relaxed event in a bar.

- The event facilitator has a crucial role in ensuring that dialogue takes place, encouraging questions and comments, guiding the discussion, promoting follow-up comments and making sure that no one in the audience who wants to contribute is neglected. If the facilitator takes a passive role during the event, it is also more likely that the event will be dominated by the speakers and that the event never moves away from a question and answer session.
- Feedback from the evaluation of dialogue events suggest that audience members felt that these events were too short and did not provide enough time for discussion, thereby preventing genuine dialogue from developing. This does not mean that events should be made longer. Instead, opportunities for the audience to engage in dialogue should be increased by adapting the event format and ensuring good facilitation.
- The format that uses a panel of speakers on a stage appears to limit dialogue. This format gives the audience fewer opportunities to participate and does often not move away from a question and answer sessions. In fact, several times such events have moved towards a lecture format with the speakers talking the majority of the time and the audience listening.
- Formats which break the audience into smaller groups encourages dialogue and works well when used. This format removes emotional barriers, such as the unease at speaking in front of a room of people, and increases audience's opportunities to contribute and participate.
- Between September 2004 and July 2004, Dana Centre events used many new and innovative formats, for example, small group discussion, forum theatre, performance, science comedy, dinner discussion. These all proved popular with the audience.
- The Dana Centre audience is information hungry and therefore, regardless of the formats, all events must be sufficiently informative to appeal to the audience. Where this has not happened, the audience have been disappointed.
- Comedy is popular format with the target audience and one that has been requested by focus group participants. Many survey participants clearly felt that they liked the Punk Science concept of combining science and comedy.
- Findings from focus groups suggest that motivations for someone to attend an event are linked to whether the event topic is perceived to be personally relevant.
- Whenever we have consulted with audience groups that are not science professionals, they have mentioned that the event title is linked to whether they decide to attend. For example, if an event title included a word that was difficult to understand, such as *stem cell research*, or *nanotechnology*, focus group participants felt that the event was not aimed at them.

Recommendations for the future

- Develop and deliver events that are targeted to ethnic minority groups in order to attract a more diverse audience to Dana Centre events. Such events have successfully attracted its intended audience previously.

- If the aim is to achieve genuine dialogue during events formats that limit participants' opportunities to contribute should be avoided and those that maximise these opportunities should be adopted. For example, use small discussion group formats more frequently as they appear to encourage genuine dialogue during an event.
- It is important that there are seats for all audience members to take part in the discussion groups. If this fails, physical, emotional and intellectual barriers will hinder participants' enjoyment and engagement.
- In order to achieve genuine dialogue in an event it is important that facilitators are briefed thoroughly as to what their task in an event is. E.g. to keep speakers to time, to ensure audience contributions are made and responded to, to keep the discussion focused on the central issues. A set of guidelines has been drawn up and is available on the Dana Centre website. These should be used to brief facilitators.
- Similarly, speakers should be briefed as far as possible regarding their role in the event, how the event will run and what the desired outcomes are. A set of guidelines has been drawn up and is available on the Dana Centre website.
- If genuine dialogue is to be achieved in an event, the facilitator must have previous experience of facilitating similar dialogue events.
- It is recommended that the Dana Centre events team develop ways to engage visitors before the event starts. For example: use a quiz; information leaflets; get visitors to introduce themselves to others in the audience.
- Always provide some form of basic background information to the event topic at dialogue events. This enables visitors who have less background knowledge of the subject to formulate questions and comments, enabling them to enter into dialogue. This can be in the form of a short introduction by facilitator, information on the screens in the D café, or leaflets.
- If the target audience for an event includes people who have differing levels of science knowledge it is important that all people feel engaged and stimulated during the event. For example, this could be done by introducing a common interest such as social, ethical, and political issues.
- It is recommended that ways to extend dialogue beyond the event are developed. For example, inform visitors of where they can find out more/contribute after the event
- Continue to use objects as part of events. The use of objects in events has proved to engage the audience and can act as a starting point for dialogue.
- However, if an event uses objects then it must be ensured that these objects are appealing, intriguing and interesting whilst also being relevant to the event topic.
- If an event uses objects it is important that the event structure allows sufficient time for visitors to interact with them and to ask invited experts about them. This could be done by a major part of the event being dedicated to object display and interaction.

- Continue using innovative formats, e.g., comedy events, Dinner @ Dana, forum theatre and performance, as they have proved particularly popular with the audience.
- The use of Democs for Dana Centre events should be continued, as this format enables visitors to discuss a subject of which they have little prior knowledge. The original Democs structure, however, needs to be simplified to better suit Dana Centre events. For example, it is recommended that the number of tasks are reduced.
- Continue to use the screens in the event space for images, information, facts and statements relevant to the events as this seem to engage the audience before and during the event.
- Ensure that images and information displayed on the screens are relevant to the event.
- If an event aims to attract a wider audience than solely science professionals, it appears that event titles should try to avoid using words that are scientific terms.

CONTENTS

1. Introduction	7
2. Aims of the Dana Centre audience research 2004-2005	7
3. Methodologies	8
4. Results	10
4.1 Audience profile of visitors at Dana Centre events and Dana Centre website users	10
4.2 Summary of findings – The Dana Centre events and target audience	14
Overall reactions to the Dana Centre	14
Dialogue at the Dana Centre	15
How to engage people in science issues	16
Event formats	17
Exploring ways to be audience led	19
5. Acknowledgments	20
6. Appendices	
1. List of evaluated events with key findings	21
2. List of available reports	25
3. Audience profile questionnaire	26

1. INTRODUCTION

This report contains a summary of findings from the research conducted between September 2004 - July 2005 and 22 individual evaluation reports produced during this period. Many of the findings from this research period reinforce conclusions about adult events, engagement in science issues and dialogue that were reached during the Naked Science audience research, prior to the Dana Centre's opening. However, this period of evaluation also identified many new points of learning about dialogue and about how to engage the target audience with science issues. All individual reports from September 2004 to July 2005 are listed in Appendix 2, along with a list of other reports that are relevant to Dana Centre events. These are available from Elin Simonsson.

Please note that the in-depth evaluation of Dana Centre events only includes events developed by the Science Museum team. EDAB or BA events were not evaluated in this particular evaluation. However, audience profile interviews were conducted at EDAB and BA events and are included in the audience profile data in this report.

2. AIMS OF THE DANA CENTRE AUDIENCE RESEARCH 2004-2005

The Dana Centre audience research 2004-2005 aimed to monitor events to ensure that the quality was not only maintained, but also constantly improved and that genuine dialogue occurred during dialogue events. This survey period also aimed to establish the profile of visitors to Dana Centre events to ensure that events were attracting their target audience.

During this survey period the recruitment of a Dana Centre audience panel took place. 38 individuals who fitted with the Dana Centre target audience were recruited to form a list of contacts that could be approached for any Dana Centre audience research.

In further detail:

- The aim of the audience profile survey was to collect demographic information about the audience to establish whether events attracted their intended target audience¹, and to identify if any part of the target audience was clearly underrepresented? (e.g. age, ethnicity, gender). The audience profile also aimed to find out about visitors' level and type of cultural activity, to monitor the number of repeat visitors to Dana Centre events, and to find out how visitors found out about events.
- The Dana Website profile survey aimed to establish the Dana Centre website user profile. This also enabled a comparison between the physical profile of visitors to Dana Centre. This survey was a one-off and will not be conducted annually.
- The event evaluation aimed to ensure that events remain innovative, effective, appealing and relevant to the target audience (format *and* content) and to ensure that genuine dialogue takes place during dialogue events.

¹ 18-45; culturally active; ethnically diverse; not only science-professionals

- The work with the audience panel aimed to find out what the target audience need and want from an event to find it accessible, interesting and appealing, and to learn more about how to develop audience led events.

3. METHODOLOGIES

Audience profiling

- In total, 1048 visitors were interviewed at 92% of all events (97 of the 106² events between September 2004 and July 2005). Surveying was conducted at Science Museum events, as well as those run by the BA and EDAB.
- Visitors were selected randomly as they arrived at the event and interviewed using a short profile questionnaire. The length of the questionnaire had to be limited due to the restricted time in which visitors can be interviewed before the event starts. Around 10 visitors at each event were interviewed, however, the number of people interviewed at each event depended on the number of people attending the event.
- In addition to the interviews, a profiling observation was carried out that provided data on total numbers, gender and ethnic balance of the audience and takes place at the beginning of the event.

Web profiling

- A pop-up survey appeared on the Dana Centre website between 24th February and 24th March.

Event evaluation

- In total 19 events were evaluated in-depth. These events included a range of different formats, e.g. dialogue and comedy events. A list of the events and key findings from evaluation can be found in appendix 1.
- At each event a detailed observation was conducted. This allowed dialogue to be tracked, and any barriers to the audience's engagement and enjoyment to be recorded.
- Email questionnaires were sent to randomly selected members of the audience after 16 of the events. The randomly selected audience members who completed the audience profile interviews at the beginning of the event were also asked if they agreed to take part in a post-event email survey. The number of sent questionnaires and the response rate of each survey therefore depended on the number of people attending and consequently the number of people interviewed at the before the event.
- After one of the events, a focus group was conducted with members of the Dana Panel

² We were unable to survey every single event due to staff shortage

- Face-to-face interviews were conducted at one of the events. The participants' responses were recorded with a digital recorder

Audience Panel

The following work was conducted with panellists:

- 1 focus group was conducted in January 2005 with a selected number of panellists to explore different issues to be used to develop the first entirely audience led event at the Dana Centre. Focus group participants were women and did not have occupations related to science, technology or medicine. This event, *Unwanted Pregnancies - The evolution of abortion*, was delivered in September 2005.
- 1 Focus group was conducted in April 2005 with a selected number of panellists (also mentioned in the event evaluation section above) after the nanotechnology Democs³ event. This focus group aimed to explore to what extent Democs can be used to encourage dialogue in the Dana Centre and what changes can be made to improve its uses during Dana Centre events. Focus group participants were not subject-matter specialists.
- An email survey with all panellists prior to the nanotechnology event series. This aimed to probe participants understanding of the subject and what they would need from an event to make the subject interesting and engaging.

From September 2005 the audience advocate and the Dana team will work with relevant community groups and interest groups to develop events and event series, instead of working with a recruited audience panel. This will enable more focused audience led events, targeted to a specific audience group.

³ Democs is a policy making tool developed by the New Economics Foundation

4. RESULTS

4.1 Profile of visitors at Dana Centre Event and the Dana Centre website

During the period September 2004 to July 2005, a total of 6907 visitors attended 106 events at the Dana Centre. Of the total audience, audience profile interviews were conducted with 15.2% (1048) of the total audience. Where applicable, information from the Dana Centre website user profile has been included for comparison. Further information about how website visitors use the Dana Centre website is given in the separate section below.

Age

Overall, Dana Centre events attract their intended target audience age range of 19-45, with the majority (81%) of visitors falling within the target age range (Table 1).

Table 1: Age range of visitors to Dana Centre events

Age	%
18 and under	0.2
19-25	20.4
26-35	41.9
36-45	18.7
46-65	15.7
66 and above	3.1

In comparison to Science Museum visitors, a higher proportion of Dana Centre events visitors are younger adults (19-35). 62.4% of visitors to Dana Centre events are aged 19-35, whilst the figure for the Science Museum is 48.4% (table 2).

Table 2: All adult visitors aged 19: a comparison between the Science Museum and Dana Centre events.

Age	Dana events visitors, aged 19 and above %	Science Museum admissions visitors, aged 19 and above %
19-35	62.4	48.4
36-65	34.5	47.6
66 and above	3.1	4.0
	100	100

There is little difference in the age profile of visitors to Dana Centre events and the age profile of virtual visitors to the Dana Centre Website, although the percentage of younger visitors (18 and under) is slightly higher for the Dana Centre website (Table 3).

Table 3. All visitors to Dana Centre events and the Dana Centre Website: a comparison of age profiles.

Age	Dana Centre events visitors %	Dana Centre Website %
18 and under	0.2	6.7
19-35	62.3	54.5
36-65	34.4	36.7
66 and above	3.1	2.1
	100	100

Gender

Overall, Dana Centre events attract a relatively equal number of women (53.7%) and men (46.3%), however, the gender balance can differ between individual events. 74.6% of visitors to *Is beauty skin deep?* in December 2004, were female, whilst 75.9% of visitors to *Hitchhikers' guide to artificial intelligence* in June 2005 were male (table 4). The gender profile of Dana Centre website users is very similar to the overall gender profile of Dana Centre events (table 4).

Table 4: Gender profile of all Dana Centre events' visitors, gender profile of visitors at 2 different Dana Centre events and gender profile of Dana Centre Website users.

	All Dana Centre events visitors %	Dana Centre Website users %	Event: <i>Is beauty skin deep</i> %	Event: <i>Hitchhikers' guide to artificial intelligence</i> %
Male	46.3	47.1	25.4	75.9
Female	53.7	52.9	74.6	24.1
	100	100	100	100

Ethnicity

The ethnic profile of the Dana events audience is 88.6% white (Table 4), which is similar to the profile of the Science Museum admissions visitors (88% white), but higher than that of the population of Inner London (65.7% white – Census 2001). This indicates that non-white ethnic groups remain under-represented in the Dana Centre audience. However, events that have been specifically aimed at ethnic communities have proved successful in attracting a more diverse audience. The event *Black scientists – where are they?*, attracted an audience that was 85.7% non-white (Table 6). The virtual visitors to the Dana Centre website appear to be slightly more diverse than the visitors to Dana Centre events, with 81.9% describing themselves as white (table 6).

Table 5: The ethnic profile of Dana events visitors. UK Science Museum visitors, and UK Dana Centre website visitors.

	Dana Centre events %	Dana Centre Website %	Science Museum %
White	88.6	81.9	84.3
Non-white	11.4	18.1	15.7
	100	100	100

Table 6. *The ethnic profile of audience at the Dana event Black Scientists: Where are they, 21 October 2005*

	Event: Black Scientists: Where are they %
White	14.3
Non-white	85.7
	100

Occupation

In order to assess whether visitors are science professionals, the occupations of visitors to the Dana Centre events have been classified into types according to the extent to which they are related to science, technology or health care/medicine

49.3% of the audience do not have professions that are related to science, technology or health care /medicine, whilst 42.8% have a profession that is in some way related to science, technology or health care/medicine. This suggests that Dana Centre events have been successful in attracting a wider audience than solely science professionals. Please note that 7.8% could not be classified.

Table 6: *Occupation types of Dana events visitors. This information is not available for Dana Website users.*

Occupation type	Dana Centre events visitors %
Other ⁴	42.4
Science related ⁵	22.0
Technology related ⁶	14.9
Unclassified ⁷	7.8
Art / design	6.9
Health professionals ⁸	5.9
	100

⁴ Occupations not directly related to science, technology or medicine; or art/design. E.g. accountant, teachers who teach other subjects than science.

⁵ Includes science professionals, science researchers, science teacher

⁶ Includes engineers and IT professionals

⁷ Those whose occupations could not be determined due to lack of information, e.g. only 'teacher', 'unemployed', 'student'

⁸ Including nurses, doctors and dentists

Cultural activity

Table 7 shows that Dana Centre visitors attend art galleries and arts-related venues and events more frequently than they attend science-related venues and events. Interestingly, nearly a quarter of respondents said that they hardly ever or never went to Science Centres or Science Museums and 37.1% stated that they do not go to science debates or lectures. Therefore Dana Centre events appear to be successful at attracting a new audience

Table 7: Cultural activity of Dana Centre events audience. This information is not available for Dana Website users.

Cultural Activity	Science Centres / Science Museums %	Art Galleries / Art Museums %	Live arts performances (theatre, comedy, dance) %	Public debates / lectures on science %	Other public debates / lectures %
More than 3 times/year	30.2	58.2	61.0	33.7	26.0
1-3 times / year	47.4	32.1	28.1	29.2	29.5
Never/Hardly Ever	22.4	9.6	10.9	37.1	44.5
	100	100	100	100	100

How visitors find out about the events

A quarter of visitors have found out about the event they attended through word of mouth, whilst over 30% found out about the event from the Dana Centre website or through Dana Centre email (Table 8).

Table 8: How visitors find out about the Dana event they attended. NB respondents could choose more than one if applicable. Other press include *The Metro*, *The Times* and *The Guardian*.

Source	%
Word of mouth	26.5
Dana email	15.4
Dana website	15.1
Other	9.5
Event organiser	7.3
Other website	6.5
Other press	6.3
Time Out	5.3
New Scientist	4.8
Leaflet	2.5
Metro Life	1.0
ScM website	0.7
Poster	0.3
	101.2

Repeat visitors

During the survey period September 04 – July 05, Dana Centre events had a high number of repeat visitors (38.5%).

Table 10. Repeat visitors to Dana Centre events September 04 – July 05.

	%
Repeat visit	38.5
First visit	61.5
	100

When comparing the figures for repeat visitors to Dana Centre events in June and July 2005 with the same period in 2004, it is clear that an increasing number of visitors return to Dana Centre events (Table 11).

Table 11. Repeat visitors to Dana Centre events June and July 2004 and 2005.

	June and July 2004	June and July 2005
	%	%
Repeat visit	26.6	43.1
First visit	73.4	56.9
	100	100

Profile of Dana Centre website users

- Almost all visitors to the Dana Centre website are between 19-59 years old (90%). They come from a high socio-economic group (95% are classified as ABC1) and have a high level of educational achievement (two thirds of the whole audience had been to Polytechnic or University).
- Visitors to the Dana Centre website are mainly resident in the UK, and of these 4/5 are resident in the London and South East area. Interestingly, when looking at the reasons people are visiting the Dana Centre website, most are going for a reason related to making a visit to the physical space.
- Dana Centre website visitors are frequent users of the Internet, who mostly use it for communication, news and increasing their General Knowledge.
- Although it was the first visit to the Dana Centre website for many of the respondents (69.3%), there are a large number of regular repeat visitors to the site – 10% visiting more than once a month.
- Visitors most often find the Dana Centre website through a link from another site or through word of mouth. The Dana Centre website also attracts visitors from passing by the physical Dana Centre.

For more detailed information about the Dana Centre website profile, see *Profile of Audience for Dana Website - Pop Up Survey Conducted March 2005*

4.2 Summary of findings - Dana Centre events

The following section draws together the results from all strands of the Dana Centre audience research conducted between September 2004 and July 2005.

Overall reactions to the Dana Centre

- Overall, visitors' reactions to the Dana Centre, both as a venue and the nature of the events, are very positive.

"The Dana Centre is amazing. It pulls together science and the public"

Focus group participant

"(The event) definitely met my expectations, and entertained me more than I thought I would be entertained and I liked the fact that my opinions were challenged"

Survey respondent

- It has become clear that visitors to Dana Centre events commonly associate 'science events' with 'lectures'. Many of those that visit events expect a much more formal format, e.g. a lecture in a traditional lecture theatre environment. However, many respondents commented that they were pleasantly surprised by the actual experience of visiting a Dana Centre event, which they found more informal, relaxed and entertaining than expected.

"It's nice to be able to have a drink or something to eat whilst listening to a presentation which is a refreshing change from a stagnant lecture theatres"

Survey respondent

"I expected it to be intimidating and incomprehensible. Instead, it was entertaining"

Survey respondent

Dialogue at Dana Centre events

Events at the Dana Centre should not be a one-way communication where the experts pass on information to non-experts, but instead the aim has been for the Dana Centre to act as a forum for dialogue⁹. Not all events at the Dana Centre are dialogue events, but those that are, need to produce genuine dialogue. The section below outlines what has encouraged dialogue to occur and outlines physical, emotional and intellectual barriers.

- In order for genuine dialogue to occur in an event it is important that the audience's opportunities to contribute are not limited by either time or the structure of the event. Many of those who took

⁹ 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.

part in event evaluation felt that the event they attended was too short and did not provide enough time for discussion, which presented an intellectual barrier. This does not mean that events should be made longer, but that the opportunities for the audience to engage in dialogue need to be increased. For example, allowing the audience to form many smaller sub-groups during an event encourages people to engage in dialogue as emotional barriers are removed. It is less intimidating to talk in front of a smaller number of people, and members in the audience have been observed to be clearly more relaxed and asking questions more frequently in a smaller group situation. Furthermore, smaller audience groups offer each event participant further opportunities to engage in extended dialogue with others.

"I came on my own and I was a bit intimidated about asking questions out aloud in front of the whole arena. I did however prefer it when I stayed at the end and was in a smaller group and was really discussing the topic. It became more intimate"

Survey respondent

"Small number of people made it easier to contribute"

Survey respondent

- The format which uses a speaker panel on a stage in front of the audience appears to limit dialogue. The structure of this format gives each audience member fewer opportunities to participate as the time for audience contribution has to be shared between the total number of visitors. Furthermore, it may be more intimidating to contribute in front of the entire audience. This format rarely moves away from a question and answer sessions, and in fact, several times such events have moved towards a lecture format with the speakers talking the majority of the time and the audience listening.
- There seem to be a strong link between the ability of the event facilitator and the amount of dialogue that occurs during the event. Observation has showed that when dialogue has been restricted in an event, it has often been due to a passive or inexperienced facilitator. This person has a crucial role in ensuring that genuine dialogue takes place, encouraging questions and comments, guiding the discussion, promoting follow-up comments and making sure that no one in the audience who wants to contribute is neglected. If the facilitator takes a passive role during the event, it is also more likely that the event will be dominated by the speakers.
- Topics with ethical, moral, philosophical and social implications appear to be successful in generating discussion, e.g. stem cell research and cloning, reinforcing conclusions that were reached during the Naked Science research.
- Furthermore, presenting conflicting opinions in such an event seem to encourage audience contribution and increase the amount of dialogue that occurs. During events where the speakers expressed opinions that were not sufficiently contrasting, the events were observed to generate less dialogue.
- An informal, friendly and welcoming atmosphere makes audience members feel relaxed and comfortable and as a consequence they seem to find it easier to engage in dialogue as emotional barriers are removed. For example, the Dinner @ Dana events provide that friendly and informal feel, particularly during the dinner, and observation has showed that the vast majority of visitors engage in discussion. The dinner also gives visitors time to reflect over the issues presented to

them at the beginning, which means that they have had the opportunity to form opinions and questions in time for the discussion session that follows.

- The use of objects in events has proved to engage the audience and can act as a starting point for genuine dialogue. During events that displayed objects, visitors seemed keen to ask questions and discuss the objects with others. But for objects to be successfully incorporated in an event, they need to be appealing, intriguing, and interesting, whilst having a real relevance to the event topic. They also need to fit with the overall event structure, giving visitors enough time to engage with the objects on display.
- The use of actors as part of an event appears to encourage dialogue. They are able to act out a character and a case study which seems to be more memorable and engaging than listening to a speaker talking about the same issues. Observation during a forum theatre event showed that nearly all in the audience reacted and commented on the comments made by the actors in the play. Forum theatre also works particularly well as it allows active audience participation, and where this participation results in the outcome of the theatre. However, if actors are to generate dialogue, the event structure must allow dialogue to take place.

How to engage people in science issues

Motivations to attend an event:

- In order to motivate someone to attend a Dana Centre event it appears that it helps if the potential audience can relate to the topic. Participants in one of the focus groups particularly mentioned that they would not come to an event at the Dana Centre if the event content was perceived as not being relevant to them.

You have to relate it to something that we can all relate to, otherwise it's advertising an event about the practicalities of science and that wouldn't work"

Focus group participant

- Whenever we have consulted with audience groups that are not science professionals, they have mentioned that the event title is linked to whether they decide to attend. For example, if an event title included a word that may be difficult to understand, such as *stem cell research*, or *nanotechnology*, focus group participants perceived the event as not being aimed at them.
- An event topic often needs to be current and topical to attract people, however, if a subject has been featured in the media for too long, it seems to become less interesting to the target audience. For example, the panellists in one of the focus groups mentioned dieting and healthy eating, which they found exhausted by the media and therefore boring. The topic could, however, still be the topic of an event, but it needs to be approached differently through using a different angle, addressing new issues, or using an innovative format, e.g. comedy.

Engagement during the event:

- Evidence from event observation suggests that the audience at Dana Centre events often is made up by people who have different levels of science knowledge. Furthermore, survey responses from event evaluation indicate that different visitors to an event may feel very differently about the level of science content provided. First, it is important to set a target audience for each of the events. Second, if this target audience includes people who have different levels of science knowledge it is

important that both groups feel engaged and stimulated during the event. For example, a common interest where the two groups can meet could be introduced, such as social, ethical, and political issues.

- The angle from which the topic is tackled and the event format will decide to what extent visitors are engaged. It is possible to engage audiences who do not perceive themselves interested in science, in science related issues. For example, focus group participants found *stem cell research* in itself a difficult subject but found themselves interested in the ethical, religious and philosophical aspects: When does life begin? What is life?
- Findings suggest that an event topic needs to be made accessible to the event's intended target audience for them to enjoy the event. For example, if the target audience includes those who are not subject specialists it is important to provide background information to the event topic in order to enable audience members to fully engage in the issues during the event. Information provision will also aid visitors with limited background knowledge of the event topic to formulate opinions and questions about the particular subject.
- Visitors to Dana Centre events are information hungry and want events to be informative and rich in information provision. Therefore, events must provide for this need whichever format they use: Democs, Dinner @ Dana and Punk Science have all combined different formats with genuine information provision that the audience have appreciated. Equally, where the audience has perceived that there had not been sufficient information provision, this is viewed as a negative no matter how good the format.
- During events that use PRS¹⁰, high levels of engagement have been observed during voting and usually the majority of audience members take part. PRS voting allows event visitors to express their opinions privately, removing a potential emotional barrier to engagement. It is important, however, that questions are relevant to the event, and that the results are incorporated in the overall event structure.
- The use of humour in a Dana Centre event appears to aid the audience members' engagement in science issues. The Punk Science series have proved a popular format with the audience and survey participants has commented that they like the idea of combining science and comedy. Observations have also recorded high levels of engagement during these events. The forum theatre event *Catching up with our climate*, also incorporated an element of humour that proved popular with the audience. During this event the audience reacted very positively to the humorous parts, whilst many of those who took part in the post-event survey commented that they liked that it was funny, as well as informative.

¹⁰ Personal Response System. Each member of the audience responds/votes privately to a question or a series of statements. The responses are recorded during the voting and displayed on the screens in the event space. PRS voting is used in ITV's *Who Wants to be a Millionaire*.

Event formats

Between September 2004 and July 2005, a range of different formats, many innovative, were used in the Dana Centre.

- Café Scientifique has run a series of dinner and discussion events at the Dana Centre (Dinner @ Dana). This format works very well and has proved to be very popular with the audience and throughout these events a friendly, positive and informal atmosphere has been observed. It uses one speaker and one facilitator who stand in front of the audience. At Dinner @ Dana, the speaker does not use a stage, which gives the event a friendlier more intimate feel. When visitors arrive they are served starters and drinks whilst the event's topic is introduced. This is followed by the dinner, where all participants have the time to reflect over the issues mentioned. Dinner is followed by a discussion session, which has proved to successfully generate dialogue.
- The Punk Science series has proved to be a popular concept with visitors and survey respondents have indicated that they are very positive to a format that combines science and comedy. It is seen as an interesting, fun and engaging way to deal with issues that may otherwise be perceived as inaccessible or boring. However, it is very important that any science comedy events are perceived by the audience as both funny and informative. If the comedy event provides only one thing or the other then evidence from respondents shows that they are not successful. Furthermore, the humour must be appropriate to the target audience - evidence shows that visitor will feel alienated if they do not perceive the level of the humour to be aimed at them.
- Drama can be used to generate discussion and this worked especially well at the forum theatre event *Catching up with our Climate*. Forum theatre is an interactive theatre performance where the audience input their ideas to influence the outcome. The audience was divided into four groups and when the theatre paused, the actors interacted with a group each to get ideas from the audience that would influence the direction of the drama. This event was particularly successful since it also included an element of humour that was popular with the audience.
- One of the most innovative and popular events was the *Science of Magic* event. This event explored the psychology of magic and included a magician's performance. The concept in itself proved to be very popular and the event was fully booked. Tricks, experiments, a high level of humour and engaging speakers/magician made this a highly successful event. The vast majority of audience members were observed to be engaged throughout the entire event and also laughed frequently throughout the show. It is clear that the audience found this event appealing and highly entertaining.
- Small group discussion format was very successful in generating dialogue as people seemed more comfortable to talk in a smaller group, whilst also getting increased opportunities to interact with others at the event. In this format the audience is divided into smaller groups around tables, whilst the speakers move around the tables and spend about 15 minutes at each. However, if this format is used it is vital that all audience members get a place at a discussion table, or they will feel excluded. It also important to communicate the format in the advertising so that visitors know what to expect.
- Objects from the Science Museum's collections and objects brought in by speakers were used in a number of events. Objects appear to be successful in engaging the audience and being a starting point for dialogue. However, for this to occur the objects need to be relevant to the event, and be

appealing, interesting and exciting to the audience at each individual event. If using objects in an event, it is also important that the event has an overall format that allows the audience to engage with the objects. For example, if the objects are displayed on separate tables in the space with a speaker present at each, then the audience can move around freely between the two tables.

- The event format that uses Democs¹¹ is successful in enabling participants to discuss issues of which they have little prior knowledge. This format has also proved popular with the audience. However, the structure of the Democs game, with its many tasks and cards, needs to be changed to better suit the nature of a Dana event. The process of forming and challenging were not sufficiently realised and there was not enough time for participants to articulate and discuss.
- The format that uses a speaker panel on a stage in front of the total audience, with a facilitator being the link between the audience and the speakers, is frequently used at Dana Centre events. Although this format works well for information provision, it is not successful in generating genuine dialogue.

Exploring ways to be audience-led

- One of the focus groups with the audience panel focused on exploring ideas and formats for an entirely audience-led event. Although previous audience research has produced important information about what the target audience want and need when attending science events, this is the first time consultation has resulted in an event that is entirely audience-led whereby this audience group were involved in choosing a topic and a format.
- Eight panellists attended this meeting: all women, between the ages of 18-45 and none of the participants had an occupation related to science, medicine or technology. This group were not intended to represent the entire overall Dana Centre target audience, but were particularly chosen as a *type* of audience group.
- The focus group participants were presented with a number of topic boards, each presenting issues related to health and biomedicine. It had been agreed with the Dana Centre events team that these broader themes should be used. The two topics that were discussed in most detail were stem cell research and abortion. Participants strongly felt, however, that for those topics to be made appealing in an event, the topic needed to be tackled in a way that gave them personal relevance. It was important for the panellists to feel that the event was perceived to be for them, and not science professionals. Participants also indicated that for the event to be engaging and interesting, the event needed to provide basic background information to the subject area, whilst also using an interactive and informal format.
- The findings from the focus group were presented to the Dana Centre events team. They decided to develop an event about abortion, but, as specified by panellists, not in a way that focused on the 'for or against' debate, as focus group participants felt this discussion had been exhausted. Instead they were interested in finding out more about the historical, political and global context to abortion. The small group discussion format was chosen for the event. The event, *Unwanted pregnancies – the evolution of abortion*, was delivered on 13 September 2005. Panellists attended

¹¹ Democs is a policy making tool developed by the New Economics Foundation. Participants use cards and fact sheets to discuss and make policy decisions.

the event and were interviewed afterwards. The complete findings will be available in October 2005.

- The result from this focus group, and the process of developing the event, are important for increasing our understanding of how to develop successful audience-led events in the future. For audience led activities to be more focused and effective, the *audience in audience -led* needs to be identified and has to be more specific than the general overall Dana Centre target audience. For example, similar audience-led activities could be linked to a planned event series that has an intended topic area and target audience¹². Alternatively, audience led events or event series could be developed in collaboration with interest and community groups, with and for those specific target audience groups.

5. Acknowledgement

Many thanks to the following for their contribution:

Event evaluation: Katie Maggs, Ellen McCallie, and Susie Fisher.

Dana Website Profile Survey: Mike Ellis and Jane Rayner

Dana Centre audience profile interviews: Sarah Dhanjal, Nicola Bray, Tamsin Lay, Emily Bick, Anakatrina Nenadovic, Alexix Gilbert, Em Lange, Emily Unell, Laura Webb, Kate Orr, Rochelle Collinson, Jenny Stripe, Carlene Reynolds, Lana Softic, Prue Nikellys, and Tracey Letts.

¹² For example, in the Wellcome Trust funded neuroscience project at the Dana Centre, a number of panellists were invited in August 2005 to explore the topics for 2 dialogue events in November

Appendix 1:

Event evaluation – some key figures and findings

Some key figures and findings from the 19 events that were evaluated between September 2004 and July 2005.

Table 12. Audit of Dana Centre events that were evaluated in September 2004 – July 2005.

	Event	Format	Total no at events	Ethnicity as % non-white	Gender as % female	Key findings	Evaluation
1	<i>The Perfect Face</i> 12 October	Speaker panel Objects Dialogue	38	18.4	78.9	Dialogue took place in this event, but not throughout. The objects engaged the majority of the audience and worked as a starting point for dialogue. The first part of this event (speaker panel) did not move away from a question and answer session.	Audience Profile Email Questionnaires In-depth observation
2	<i>Dinner @ Dana: craving sex</i> 20 October	Dinner and discussion Dialogue	52	13.6	68.2	High levels of engagement were observed. This event generated genuine dialogue, particularly during the dinner and the discussion session that followed. Some survey respondents felt that the event content did not correspond the way the event had been advertised.	Audience Profile Email Questionnaires In-depth observation
3	<i>Catching up with our Climate</i> 2 November	Forum theatre Dialogue	64	6.3	50.8	The audience's reactions to this event were very positive. The majority of audience members were observed to look engaged, entertained and interested in the event. At times, the actors playing the climate change experts seemed a little confused about the facts behind climate change.	Audience Profile Email Questionnaires In-depth observation
4	<i>Antenna: Smoking or Non-Smoking</i> 10 November	Speaker panel Objects Dialogue	35	8.8	70.6	Survey respondents felt that this event was thought-provoking and topical. Some dialogue occurred during this event Although some dialogue did occur in this event, it was restricted, mainly due to a passive and inexperienced facilitator	Audience Profile Email Questionnaires In-depth observation
5	<i>Punk Science: Energy</i> 1 December	Science Comedy	42	12.2	46.3	Participants liked the idea of combining science and comedy. Many in the audience were observed to laugh and smile throughout. Some survey respondents felt the humour in this	Audience Profile Email Questionnaires In-depth observation

	Event	Format	Total no at events	Ethnicity as % non-white	Gender as % female	Key findings	Evaluation
						particular Punk Science was aimed at teenagers and not at them.	
6	<i>Antenna: Space detectives</i> 11 January	Speaker panel Objects	85	4.2	35.2	The majority of the audience were interested and entertained throughout the event. There was little room for audience members to gather around objects which meant that some were unable to see or interact with the curator	Audience Profile Email Questionnaires In-depth observation
7	<i>Dinner @ Dana: Craving shopping</i> 19 January	Dinner and discussion Dialogue	52	7.7	67.0	Genuine dialogue occurred during this event and a high level of unprompted questions and comments stimulated dialogue. The event content did not correspond to the way the event had been advertised, and some survey respondents felt disappointed by this.	Audience Profile Email Questionnaires In-depth observation
8	<i>Punk Science: Einstein</i> 8 February	Science Comedy	102	6.1	43.4	Many positive reactions were observed throughout this event which suggest that the audience were entertained for the majority if the time. Good use of music. Some felt that PRS voting was overused.	Audience Profile Email Questionnaires In-depth observation
9	<i>Testing Complimentary Medicine</i> 23 February	Small group discussion Dialogue	70	13	68	The small discussion groups were observed to generate more dialogue than other events. There were not enough seats for all audience to take part in a small group discussion. This presented a physical, emotional and intellectual barrier to those audience members who could not take part.	Audience Profile Email Questionnaires In-depth observation
10	<i>Nano-products: Coming to a store near you</i> 3 March	Speaker panel (half event) Objects/products on 4 display tables (half event) Dialogue	52	6.5	48.4	The objects displayed in this event generated interest and acted as a starting point for dialogue. In the final discussion part, the facilitator took more than one question at once from the audience. This meant that some were no answered, which clearly caused frustration.	Audience Profile Email Questionnaires In-depth observation
11	<i>Quacks and Charlatans</i> 9 March	1 speaker: Talk Objects	50	32.0	48.0	The use of objects in this event worked well and generated interest and engagement. This event had a 'guess the mystery object' competition that appeared popular with the audience.	Audience Profile Email Questionnaires In-depth

	Event	Format	Total no at events	Ethnicity as % non-white	Gender as % female	Key findings	Evaluation
						There was no time given for the audience to comment or ask questions. Visitors clearly found this frustrating.	observation
12	<i>Where is the UK in the Nanoworld?</i> 17 March	Speaker panel	42	12	66.0	Some audience members felt that they had gained a greater understanding of the subject through attending this event. The event content did not correspond to the way it had been advertised and some audience members were disappointed by this. Dialogue did occur, but not throughout the event.	Audience Profile Email Questionnaires In-depth observation
13	<i>Play the Nanotechnology card game</i> 5 April	Democs Dialogue	40	8.7	56.5	This event generated genuine dialogue. Democs enabled participants were able to discuss a subject of which they have little prior knowledge. The Democs structure needs to be simplified to better suit the structure of a Dana Centre event.	Focus group
14	<i>Mighty Gene Machine</i> 11 May	Short drama to start discussion 2 facilitators, no specialist speakers Dialogue	22	15	40	Dialogue occurred several times within this event. There was no subject specialist present at this event, and at times this appeared to be frustrating for the audience.	Audience Profile Email Questionnaires In-depth observation
15	<i>The Hitchhiker's Guide to Science</i> 2 June	Small group discussion Dialogue	34	No data available	50	Dialogue occurred several times within this event. Participants' overall reactions to the small group discussion format were positive In the small group discussions sessions, two of the speakers dominated their respective group by speaking for the majority of the time	Profile observation In-depth observation Face-to-face Interviews
16	<i>Hithiker's Guide to Space Tourism</i> 7 June	Speaker panel Dialogue	34	16.7	40.0	The audience were observed to be engaged by the speakers and the subject, and seemed particularly intrigued to hear about someone's personal experience of space tourism. Speakers dominated the event, which became more of a lecture than a dialogue event. Not enough time for questions. This event did not move beyond a question and answer session	Audience Profile Email questionnaires In-depth observation
17	<i>Night Creatures</i>	Speaker panel	68	11.9	55.2	The majority of the audience seemed interested	Audience Profile

	Event	Format	Total no at events	Ethnicity as % non-white	Gender as % female	Key findings	Evaluation
	12 July	Dialogue				<p>and paid attention throughout the event. Speakers seemed to engage the audience.</p> <p>Speakers dominated the event, which became more of a lecture than a dialogue event. And there was not enough time for questions/comments. This event did not move beyond a question and answer session</p>	Email questionnaires In-depth observation
18	<i>Dinner @ Dana: Migraines</i> 20 July	Dinner and discussion Dialogue	24	3.8	55.6	<p>Audience members' contributions often appeared to be related to personal experience. Dialogue occurred during dinner and in the discussion session.</p> <p>The facilitator arrived late, which caused some confusion.</p>	Audience Profile Email questionnaires In-depth observation
19	<i>The Science of Magic</i> 29 July	Performance	115	12.6	45.3	<p>It is clear that the audience found this event appealing and highly entertaining.</p> <p>The organisation at the start was confusing for audience members and not enough information was provided to inform them what was happening where and at what time.</p>	Audience Profile In-depth observation

Appendix 2

Reports produced between September 2004 and July 2005. All are available from VRG

	Report	Description
1	The Perfect Face	Event evaluation
2	Dinner @ Dana: craving sex	Event evaluation
3	Catching up with our climate	Event evaluation
4	Antenna: Smoking or non-smoking	Event evaluation
5	Punk Science - Energy	Event evaluation
6	Nanotechnology: what the target audience want and need from an event	Email survey with panellists. This survey explored what panellists knowledge of nanotechnology, but also asked what they needed from an event to find it accessible, interesting and appealing.
7	Antenna - Space detectives	Event evaluation
8	Dinner @ Dana - Craving shopping	Event evaluation
9	Punk Science Einstein	Event evaluation
10	Ideas for an audience led event	Focus group report with panellists
11	Testing time for complimentary medicine	Event evaluation
12	Quacks and charlatans	Event evaluation
13	The UK and nanoworld	Event evaluation
14	Nanotechnology Democs	Event evaluation and focus group report
15	The mighty gene machine	Event evaluation
16	The hitchhiker's guide to science	Event evaluation
17	The hitchhiker's guide to space tourism	Event evaluation
18	Night Creatures	Event evaluation
19	Dinner @ Dana - Migraine	Event evaluation
20	The science of magic	Event evaluation
21	Dana Website profile Report	Profile of the Dana Website Users
22	The nanotechnology series	Feedback report for DTI

Other reports relevant to Dana Centre events

	Report	Description
1	Wellcome Trust Naked Science report	The findings from the pre-Dana Naked science evaluation. Contains all individual reports
2	Dana audience profile report June-July 2004	Audience profile
3	Green gadgets	Event evaluation
4	Comedy events	Event evaluation
5	Cybersalon	Event evaluation

Appendix 3

The Dana Profile questionnaire used between September 2004 – July 2005

Hello, I work for the Dana Centre. We are doing a quick survey of the visitors to this event. Could I ask you a few short questions? It will only take one minute.

1. How did you find out about this event?

- | | |
|--------------------------------|------------------------------|
| Dana email | Time Out |
| Dana website | New Scientist |
| Dana leaflet | Other press (please specify) |
| Dana poster | |
| Science Museum website | Other |
| Other website (please specify) | |
| Event organiser | |
| Word of mouth | |

2. Have you been to an event at the Dana Centre before? Yes / No
 (If yes) Which event(s) was it/were they?

3. Can I ask what your current occupation is?
 (If a student / teacher / researcher ask which subject.)

4. How often do you go to the following:

	hardly ever / never	1-3 x per year	more than 3 x a year
Science centres / science museums			
Art galleries / art museums			
Live arts performances (e.g. theatre, dance, comedy)			
Public debates/lectures on science			
Other public debates/lectures			

5. Can I ask which of these age groups you belong to?

18 & under	19-25	26-35	36-45	46-65	65+
------------	-------	-------	-------	-------	-----
