

Turning Science into Fun

A study on publicity, experience and potential impact of Discovery Festival 2010

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Preface

Since 2006 the Foundation Very Disco in Amsterdam organizes the yearly event Discovery, currently named Discovery Festival. The Cultural Studies Foundation in Amsterdam was asked in 2009 and in 2010 to do research during this event in order to get more insight in the experiences of visitors, in the way they evaluate this event, and in the potential impact of this event.

Several people have been collaborating in this study. In the first place there are the many visitors who were willing to fill in an online questionnaire during the manifestation, and also those who agreed to participate in an in-dept interview about Discovery Festival 2010. We would also like to thank the interviewers: Maud van Beek, Maarten de Boer, Robin ten Brink, and Lotte Windig for collecting 215 questionnaires and 11 in-dept interviews. And last but no least we like to thank the organizers of Discovery Festival 2010 for their collaboration before and during the event, and their support by making the online survey possible by providing computers with Internet access. We are especially grateful to Alex Verkade en Tanja Koning for their help throughout the whole research project.

Needless to say that the responsibility for this report lies entirely with the authors.

Amsterdam, December 2010

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1. Aim of the study

Discovery Festival, a yearly event in which contemporary art and recent scientific developments are combined into one format: a night of music, arts and science, has been organized since 2006. It is part of the European Researchers Night (ERN), organized at the same date in several European countries, but the format is different compared to other ERN's.

The party in The Netherlands, in 2010, was held in science centre NEMO, a science museum in the centre of Amsterdam. Also this year the program was a mix of art, music, culture and science, like announced on the website www.discoveryfestival.nl and in the program magazine. The same day a small-scale scientific event was organized as a try-out for a limited number of high school students to assess their interests in science and technology, but this event was organized separately from Discovery Festival. The current study is, however, not dealing with this try-out.

Discovery Festival is subsidized by the European Union, more particularly by the European Researchers Night, and in the Netherlands co-funded by Platform Beta Techniek, NWO, KNAW, and Science Center NEMO.

From the very beginning, the idea behind Discovery has been to improve the image of science and scientists by presenting recent, often spectacular, scientific discoveries in a relaxed atmosphere in which artistic performances, like live music, play an important role. That means that Discovery aims at a public consisting of participants that are both familiar and not familiar with science and scientists, are eager to go out partying during the weekend, and to offer them scientific discoveries that are popularized in a non-traditional way. In other words, it aims to reach an audience that is prepared to discover new developments in science, technology, art and music, and that is prepared to have their brains tickled during an evening out.

Since the start in 2006 the target group consists of a comparative young public, aged between 18 and 40. Around 1700 people, a full house, visited Discovery Festival 2010.

The aim of the current impact study is to investigate the background of the visitors (like educational level, age, gender), the way the publicity campaign around Discovery Festival has been experienced by the public, their image of science and scientists, their evaluation of the program of Discovery Festival 2010, and their ideas and suggestions for the next edition of Discovery Festival in 2011.

After presenting the research questions and the research design, in chapter 2, we'll pay attention to the background of the visitors of Discovery Festival 2010 in chapter 3; the publicity campaign in 2010 in chapter 4; the images of science and scientists in chapter 5, and the evaluation of the event by the visitors in 2010 in chapter 6. Finally, in chapter 7, we will discuss the conclusions of the study and present some ideas and suggestions for the next edition of Discovery in 2011, based on the interpretation of the findings and the experiences of visitors. The questionnaire for the web survey, including the marginals, and the topic list for the qualitative interviews is added to this report as appendix 1 and 2 respectively.

Throughout the report, and where possible, the findings will be compared with the findings from the research that was done in 2009 during Discovery09 (Van der Veer, Higler & Woelders, 2010).

2. Research questions

Given the aim of this study the following research questions have been formulated.

1. What is the background of the visitors of Discovery Festival 2010 compared to the findings in 2009?
2. How effective have the different news media been during the publicity campaign for Discovery Festival 2010 compared to the findings about the campaign in 2009?
3. What image do visitors of Discovery Festival 2010 hold of science and scientists, compared to the findings in 2009?
4. What suggestions do visitors have for the next edition of Discovery?

2.1 Research design

To answer the research questions a cross-sectional design was used: an online survey among all the visitors resulting in a sample of 215 visitors during the night in which Discovery Festival 2010 took place: September 24, 2010, from 21.00-04.00 h. in science center NEMO, Amsterdam. The survey was carried out with the Internet research tool eXamine (Roelofsma, Bottema, & Smeets, 2005).

In addition to the survey a small sample of 11 visitors was selected for an in-depth interview of about 10-15 minutes. The main purpose of these in-depth interviews was to acquire more detailed information concerning 1) respondent's opinions about the general image of science and scientists and 2) respondent's assessments of the extent in which events like Discovery Festival 2010 contribute to improving that image. So the interviews were held to complete the information of the survey and add validation to the research. The data from the interviews have also the function of enriching the survey with detail and illustrations.

2.2 Data analysis

The collected survey data have been analyzed with SPSS and MSP5 (Molenaar, Van Schuur, Sijtsma, & Mokken, 2000); the in-depth interviews were registered on tape. For the purpose of the analysis the interviews were (partly) transcribed, categorized, and analyzed by using procedures of qualitative data-analysis (Ritchie & Lewis, 2003).

3. The visitors of Discovery Festival 2010

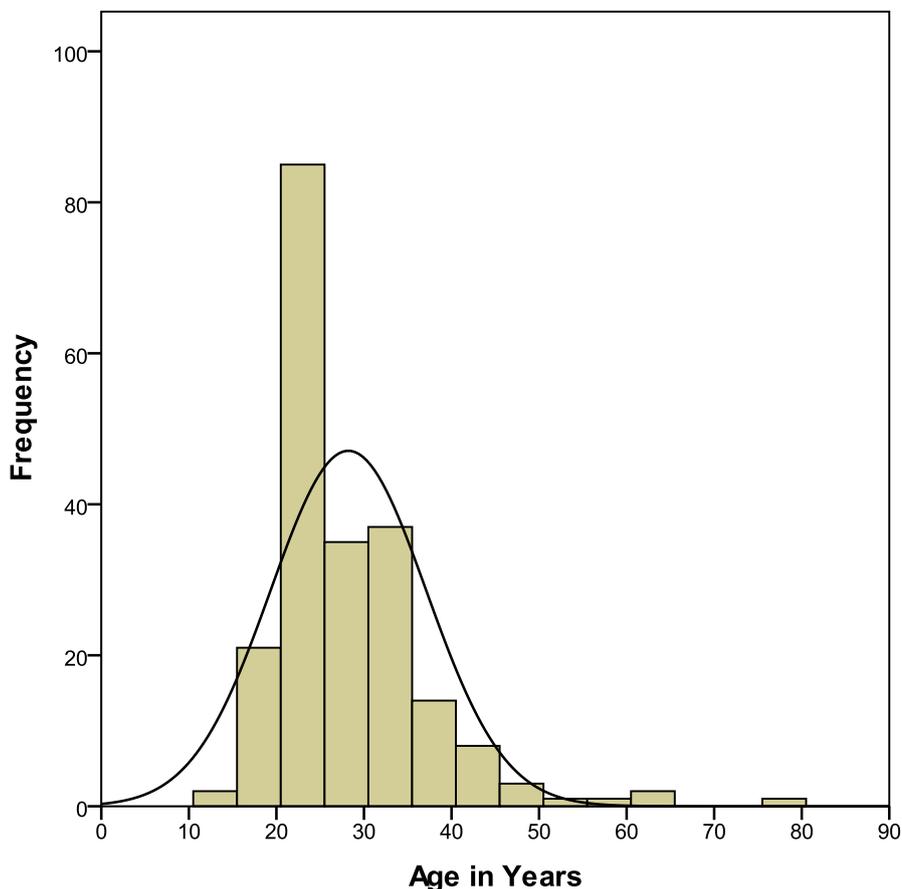
Like last year's edition Discovery Festival 2010 was sold out, and visited by about 1700 people. According to the collected sample data 54% were female. The mean age of the visitors was 28.2 years (SD=8.9)

The educational level of the visitors is presented in table 1, and the distribution of age in figure 1.

Table 1. Educational level of visitors of Discovery Festival in 2010 and 2009

<i>Completed level of education</i>	<i>Percentage in 2010</i>	<i>Percentage in 2009</i>
Elementary School	0	0.6
Lower secondary school (LBO / VMBO / MAVO / MULO)	3.3	1.1
Upper secondary school (HAVO)	4.3	8.3
Upper secondary school (VWO / Gymnasium / HBS)	16.7	24.9
Vocational training (MBO)	1.9	3.3
Polytechnics (HBO)	20.0	18.2
University (WO)	53.8	43.6
<i>Valid n</i>	<i>215</i>	<i>181</i>

Figure 2. Histogram of the age visitors of Discovery Festival 2010



The data presented in table 1 and figure 1 show that Discovery Festival in 2010 was visited by comparatively young people with a high educational level, even higher than in 2009: 74 percent said to have completed a bachelor or master degree. Since 2007 the mean age has fluctuated only a little; in 2010 the mean age is about 28 years. In short, Discovery attracts young highly educated visitors.

The answers of the visitors to the question about the importance of science in the daily life are presented in table 3.

Table 3. The importance of science in daily life

<i>How important is science in your day-to-day life?</i>	<i>Percentage in 2010</i>	<i>Percentage In 2009</i>
Very important	38.6	34.8
Rather Important	39.1	47.1
Neutral	14.4	11.2
Rather unimportant	5.6	4.8
Very unimportant	1.9	0
Don't know / no opinion	0.5	2.1
<i>Valid n</i>	<i>215</i>	<i>181</i>

Without any doubt science is important in the lives of nearly all visitors (nearly 88 percent finds science rather or very important). This result is a little more than was found in the sample of Discovery 2009 (then 82%). Put into a broader perspective, this number is rather high. The Eurobarometer (2005: 68) reports that 60% of the Dutch people find Science important in their daily life. This indicates that also the visitors of Discovery Festival in 2010 have an above-average relation with science, not surprising because most visitors have a bachelor or master degree.

The question rises: how did the organizers of Discovery Festival manage to attract these visitors?

4. The effectivity of the publicity campaign around Discovery Festival 2010.

The publicity campaign around Discovery Festival 2010 took place in August and September 2010. Several media have been used, online and printed media like the website www.discoveryfestival.nl, social network sites like Facebook, Hyves and Twitter) and posters/flyers. In the weeks before the event billboards were placed all over Amsterdam. The printed media campaign was primarily oriented towards potential visitors in and around Amsterdam, but the rest of the publicity was oriented towards a wider public.

The different ways in which people were informed about Discovery Festival and the frequency with which the different ways were mentioned by the visitors are presented in table 4.

Table 4. The effectivity of the publicity campaign around Discovery Festival 2010.

<i>Way of contact?</i>	<i>Percentage 2010</i>	<i>Percentage 2009</i>
Social network sites, e.g. Hyves and Facebook	12.3	4.9
Social media, e.g. Twitter and blogs	3.4	0.4
Personal contact with someone who is not involved in the organization, family, friends	35.1	37.0
Personal contact with someone who is involved in the organization	28.0	16.7
Radio and/ or Television	0.3	0.4
Newspaper(s) and/ or Magazine(s)	0	2.3
Poster along the road	3.4	2.3
School	4.5	7.2
Flyer	2.2	-
Newsletter	1.9	3.4
Agenda websites, like I Amsterdam, NL 20, AUB or nacht.nl	4.5	--
Last year's visit of Discovery Festival	--	5.6
www.discoveryfestival.nl	--	6
Else	4.5	14
<i>Times mentioned</i>	256	265

The data in table 4 clearly shows that informal contacts (friends, family, somebody involved in the organization), mentioned about 63 percent, seem to have been very important for people's decision to visit or not to visit Discovery Festival, that is even a much higher percentage than in 2009 (about 54 percent). It also shows that the website and social network sites played a comparatively modest role in the publicity campaign.

One of the respondents mentioned that the "current way of informing people about the event will only reach a specific group, namely highly educated, young people who already have interests in science. Also other groups should be informed because then people who are not familiar with science can come into contact with this subject; a more diverse public can visit Discovery Festival".

5. Images of science and scientists

Discovery Festival aims at improving the image of science and of scientists among their visitors and more generally among the general public.

During former editions of Discovery Festival questions have been posed to visitors concerning their images of science and scientists, for example, by using measuring instruments like the *Imago-scale* developed by Krajcovicch & Smith (1982) and an instrument developed in the so-called Eurobarometer (2005). The statements in these measuring instruments however suffer from wording problems and other problematic formulations, also mentioned by Koolstra (2009). Therefore it was decided in 2009 to develop a new measuring instrument with the help of experts in the field of science communication.

This new 10-item measuring instrument consists of two subscales: one list of 5 statements about science, and another list of 5 statements about scientists.

A reliability test of the total 10-item scale yielded an alpha score of .74. The distribution of answers given in 2010 is presented in the tables 5a (about the image of science) and 5b (about the image of scientists). In the tables the percentage agreement and totally agreement are collapsed and indicated as positive image-scores (1) for the items 3, 4, 5, 7, 9, and 10. For the other, reversed formulated, items 1, 2, 6 and 8 the percentages disagreement and totally disagreement are collapsed and indicated as positive image-scores (1). All the other answers are considered to indicate a non-positive image (score=0). In both tables the percentages are presented for 2010 (n=215) and 2009 (n=186).

Table 5a. The image of science among visitors of Discovery Festival

<i>Statement</i>	<i>Positive Image in 2010</i>	<i>Non-positive Image in 2010*</i>	<i>Positive Image in 2009</i>	<i>Non-positive Image in 2009*</i>
1. We put too much confidence in science.	55.3% (n=119)	44.7% (n=96)	56.2% (n=105)	43.8% (n=81)
2. Generally speaking science does more wrong than good.	79.5% (n=171)	20.5% (n=44)	69.7% (n=130)	30.3% (n=56)
3. Thanks to science there is progress.	85.6% (n=184)	14.4% (n=31)	81.6% (n=152)	18.4% (n=34)
4. Thanks to science people live longer.	84.2% (n=181)	15.8% (n=34)	80.0% (n=149)	20.0% (n=37)
5. Science makes life more pleasant.	71.2% (n=153)	28.8% (n=62)	61.0% (n=113)	39.0% (n=73)

*Non-positive answers include the possibility don't know / no opinion and people that did not respond to the particular question.

Table 5b. The image of scientists among visitors of Discovery Festival

<i>Statement</i>	<i>Positive Image 2010</i>	<i>Non-positive image 2010*</i>	<i>Positive Image 2009</i>	<i>Non-positive image 2009*</i>
6. Scientists are so occupied by their work that they do not know what happens in the rest of the world (disagree).	64.2 (n=138)	35.8 (n=77)	53.3 (n=99)	46.7 (n=87)
7. The profession of scientists is fascinating (agree).	88.4 (n=190)	11.6 (n=25)	86.1 (n=160)	13.9 (n=26)
8. Scientists have a poor social life (disagree).	59.1 (n=127)	40.9 (n=88)	49.0 (n=91)	51.0 (n=85)
9. Scientists are prepared to work long days (agree).	67.9 (n=146)	32.1 (n=69)	66.6 (n=123)	33.4 (n=66)
10. Scientists create solutions for problems in society (agree).	72.1 (n=155)	27.9 (n=60)	71.5 (n=133)	28.5 (n=53)

*Non-positive answers include the possibility don't know / no opinion and people that did not respond to the particular question.

The findings in tables 5a and 5b show that the overall image of both science and scientists is positive, in 2010 even more positive than in 2009.

To get more insight in the way the image of science and scientists is constructed by visitors of Discovery, a more economical instrument with fewer items was developed in 2009 by constructing a cumulative scale of the Mokken-type. The Mokken Scale Procedure (MSP) (Molenaar, Van Schuur, Sijtsma, & Mokken, 2000) extracted a 6-item cumulative scale out of the 10 items (Van der Veer, Higler & woelders 2010). As a result of this analysis a cumulative scale was detected: *the Image of Science-scale*, including 6 statements about science and scientists (see table 6).

Table 6. *The Image of Science-scale*

<i>Item</i>
a. The profession of scientists is fascinating.
b. People live longer thanks to science.
c. Thanks to science there is progress.
d. Scientists create solutions for problems in society.
e. Scientists are prepared to make long working days.
f. Science makes life more pleasant.

Source: Van der Veer et al., 2010

The idea behind this *Image of Science-scale* is the following. All those who agree with one item score 1, and the more items one agrees with, the higher the score (in this case with a maximum of 6). Most visitors in our sample agree on item a (the 'easiest' item), and comparatively least visitors agree on item f (the most 'difficult' item). Those who agree on item f are also likely to agree on items a through e and have the most positive image of science and scientists (score 6). Those who agree on item d and have a score of 4 are also likely to agree on items a, b and c, but not on items e or f, et cetera. This means that if we know somebody's score on this *Image of Science-scale*, we know, with a high probability, with which of the six items this individual agrees and with which ones he or she does not agree. The mean score on this *Image of Science-scale* of all the visitors in the sample in 2010 is 4.7 (was 4.6 in 2009), which means that most people agree with the statements a through d. So

by using this cumulative scale, we may conclude that the visitors of Discovery Festival in 2010 have indeed a very positive image of science and scientists. There is no difference in image between men and women, between older and younger visitors, and between higher and comparatively lower educated visitors either.

The data derived from the interviews confirm this finding. The respondents think positively about science, scientists and the benefits of science. Most of the respondents think that science plays an important role in life. It is associated with progression and accounted an important condition for booking progress in our modern society.

Although most of the visitors are familiar with science and think about it in a positive way most of them think that people in general have another image of science. Several interviews show that science can be difficult to understand for the average public. One of the interviewees says: *“one of my friends is studying maths. When we ask him about his study he tells us that it’s not worth telling us about his subjects because we probably won’t understand. And we, his friends, are also well educated”*.

Another image that comes forward from the interviews is that people in general do not realize what the impact of science is on their daily life. One of the respondents said: *“science is a very specific kind of thing. It’s removed far away from the man on the street. When you bring it closer to the average public, they will see for themselves what the benefit of it is”*.

6. Evaluation of Discovery Festival 2010

The visitors were asked how they evaluated the different activities during the event by means of giving a mark from 1 (extremely bad) to 10 (excellent). The results for Discovery Festival 2010 are presented in table 7 and compared with the results from the evaluation in 2009.

Table 7. Evaluation of activities during Discovery Festival

Type of Activity	2010			2009		
	Mean (standard deviation)	Number of responses	Not applicable, respondent did not visit the activity	Mean (standard deviation)	Number of responses	Not applicable, respondent did not visit the activity
Live experiment	7.5 (1.1)	143	62	7.5 (1.6)	116	73
Music	7.0 (1.5)	166	40	7.1 (2.0)	123	63
Games	7.2 (1.2)	110	95	6.9 (1.8)	97	89
Art programme	7.2 (1.4)	113	88	6.8 (2.0)	104	82
Film	7 (1.4)	90	113	6.4 (2.1)	86	100
Lectures	6.9 (1.6)	97	106	N/A	N/A	N/A

All activities during Discovery Festival in 2010 are evaluated positively, just like in 2009. The mean grade for all activities is 7.2 (7.0 in 2009), and the live experiments were evaluated most positively compared to the other activities. This year respondents were asked about their evaluation of the lectures (micro talks). These were evaluated positively too, although marked comparatively lowest. That is at least in accordance with the evaluation of activities during the event *Science Week*, also organized in most European countries, and in the Netherlands named Oktober Kennismaand (October Month of Knowledge). Every year both young and old tend to evaluate activities in which they are supposed to participate actively more positively than (more passive) lectures (Van der Veer, Groven, & Higler, 2010).

The results from the qualitative research confirm these results and at the same time they generate more detailed information about the way the public experienced the event of Discovery Festival 2010.

The respondents are positive about combination of science, music and art. Science is presented in another way. One of the respondents formulates: *“it’s an interesting combination, because it makes science more fun, with dance and beer. It’s more like a social event than a science thing”*. Another interviewee said *“it’s a nice combination of all the things, nice to be in NEMO at night. Not only science, but also drinks and a pleasant surrounding”*.

A few respondents are more critical about the concept of combining science with art and music. In their opinion *“it’s an event with a lot of ‘nerds’. It makes no difference whether you combine it with music and dance; it’s still a ‘nerd-thing’”*. The

combination can also be confusing. *“The communication about what to expect is not very clear. I don’t know what the exact idea is. I miss the connection between the different items of science, art and music. But at the same time this vagueness makes it very surprising”.*

Although the combination with music is experienced positive in general, it is also mentioned that the music was sometimes disturbing. It was for example difficult to understand the presentations. Several respondents suggested creating quiet spaces for some activities, like discussions, during the next edition of the event. The different items of music and science can be combined into one event but could be presented in a more separate way, to improve the level of attention.

7. The potential impact of Discovery

Like in previous years Discovery Festival 2010 attracted a young and comparatively highly educated public. Discovery Festival 2010 has been a highly appreciated and for that reason successful event. On the average the different types of activities were evaluated positively, whereas the interactive activities (live experiments) were evaluated the most positively. The results reported in the previous chapters show furthermore that the format of Discovery – music, arts, science and culture in one package – is evaluated positively too. Hence informal contacts seem to have been very important for people's decision to visit Discovery Festival, more important than other publicity channels.

The results of the survey among visitors and the qualitative interviews among a small sample of them also show that the image of science and scientists of the visiting public is a positive one. It is no surprise that the vast majority of them considers science very important in daily life.

At the same time the results of the qualitative interviews show that the interviewees consider the image of science held by 'others' (the general public) is still not very positive. According to those respondents the man-on-the-street considers science and scientists rather difficult to understand, far away from daily life and boring. The same was already concluded by the European Commission in 2001 (weten.nl, 2001; see also e.g. De Roode, 2001). This implies that the potential impact of an event like Discovery is large: the image of science and scientists can be improved by aiming at a broader public than is considered the target group anno 2010.

What could this mean for next editions of Discovery for the target group, the publicity campaign, and for the content of the program of the event?

Taking the afore-mentioned results of our study as point of departure, the following suggestions could be formulated.

It is important to continue informing the category of younger students, students in the last years of their upper secondary or vocational training like those who in September 2010 participated in the try-out that took place in the afternoon of the same day Discovery Festival started, because they belong to the target group of the very near future. They are faced with the question whether to continue their education and, if yes, in what way.

Hence the target group could be extended toward the category younger students, those who just started their study at e.g. a polytechnics or university, but who are still unsure about whether they want to start a scientific career, to complete a continuing master, or start a professional career in a scientific domain. An improvement of the image of science and scientists of young people who belong to this category will likely have an impact on their professional choices.

Extending the target group means a change in the publicity campaign. It means that not only universities and polytechnics, but also upper secondary schools and vocational schools in the region should be approached.

The survey and the interviews showed that a mix of science and music is appreciated by the visitors but that the way this is worked out should be considered.

Science and music can be combined, but in a more separate way. The presentations and certain experiments need quiet spaces.

The survey and the interviews showed that the interactive items in the program (including experiments and debates) are highly appreciated by the visitors and there is no reason to assume that potential visitors would not like an interactive program.

Finally, the scientific content of Discovery leans more upon beta than alpha and gamma sciences. It seems worthwhile to consider importing more findings of gamma sciences (e.g. economics, psychology) and alpha sciences (e.g. history) into the program.

The current public is positive about Discovery Festival. The high potential of the event can be found in reaching a group of people that is not (yet) familiar with science. Spreading the enthusiasm of the current public to a broader public of young people could bring the organizers of this researchers night even closer to its general aim: improving the image of science and scientists with the help of an unique formula: Science, music, dance, arts during one event, named Discovery Festival.

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Appendix 1. Questionnaire for web survey Discovery Festival 2010

Dear Visitor,

At this moment you are visiting Discovery Festival 2010, a night full of science, music and culture. We kindly ask you to fill in this questionnaire. The aim of this investigation is to learn about your experiences and ideas that will help to improve activities and communication of Discovery in the future. Answering the questions will take only a few minutes. Of course your answers will be analyzed anonymously.

We would like to thank you in advance for your help!

1. In what way have you been informed about Discovery Festival 2010? (multiple answers possible)

<i>Way of contact</i>	<i>Frequency (times mentioned)</i>	<i>Percentage</i>
Social network sites, i.g. Hyves and Facebook	33	12.3
Social media, i.g. Twitter and blogs	9	3.4
Personal contact with someone who is not involved in the organization, family, friends	94	35.1
Personal contact with someone who is involved in the organization	75	28.0
Radio and/ or Television	1	0.3
Newspaper(s) and/ or Magazines	0	0
Poster along the road	9	3.4
School	12	4.5
Flyer	6	2.2
Newsletter	5	1.9
Agenda websites, like I Amsterdam, NL 20, AUB or nacht.nl	12	4.5
Else	12	4,5
<i>Times mentioned</i>	<i>256</i>	<i>100 %</i>

2. How important is science in your day-to-day life?

<i>The importance of science in day-to-day life?</i>	<i>Frequency</i>	<i>Percentage</i>
Very important	83	38.6
Rather Important	84	39.1
Neutral	31	14.4
Rather unimportant	12	5.6
Very unimportant	4	1.9
Don't know / no opinion	1	0.5
n	215	100

3. There are different ways to look upon scientists. Would you please indicate for each of the following statements whether you agree or disagree with them?

<i>Statement</i>	<i>Totally agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Totally disagree</i>	<i>Don't know/ no opinion</i>	<i>No Answer</i>	<i>Total (n=215)</i>
Scientists are so occupied by their work that they do not know what happens in the rest of the world.	4	30	37	89	49	5	1	215
The profession of scientists is fascinating.	70	120	14	6	3	1	1	215
Scientists have a poor social life.	6	29	39	79	48	11	3	215
Scientists are prepared to work long days.	42	104	43	7	1	15	3	215
Scientists create solutions for problems in society.	43	112	44	8	2	4	2	215

4. The next statements concern science. Would you please indicate for each of the following statements whether you agree or disagree with them?

<i>Statement</i>	<i>Totally agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Totally disagree</i>	<i>Don't know/ no opinion</i>	<i>No answer</i>	<i>Total (n=215)</i>
We put too much confidence in science.	7	40	44	77	42	2	3	215
Generally speaking science does more wrong than good.	3	11	22	79	92	4	4	215
Thanks to science there is progress.	62	122	15	7	3	1	5	215
Thanks to science people live longer.	68	113	22	5	2	1	4	215
Science makes life more pleasant.	42	111	42	11	1	2	6	215

5. If you would be invited to evaluate activities during Discovery that you just visited, what mark or what marks, ranging from 0 (low) to 10 (high) would you give?

<i>Type of Activity</i>	<i>Number of responses</i>	<i>Mean grade (scale from 1 to 10)</i>	<i>Not Applicable</i>
Live experiment	143	7.5	62
Music	166	7.0	40
Games	110	7.2	95
Art programme	113	7.2	88
Film	90	7	113
Lectures	97	6.9	106

6. What is your sex?

Female (54.0%)
 Male (43.3 %)
 No answer (2.8%)

7. What is your age?

28.2 (mean)

8. What is your highest completed education?

<i>Completed level of education</i>	<i>Percentage</i>	<i>Frequency</i>
Elementary School	0	0
Lower secondary school (LBO / VMBO / MAVO / MULO)	3.3	7
Upper secondary school (HAVO)	4.3	9
Upper secondary school (VWO / Gymnasium / HBS)	16.7	35
Vocational training (MBO)	1.9	4
Polytechnics (HBO)	20.0	42
University (WO)	53.8	113
<i>Total</i>	<i>100</i>	<i>215</i>

9. Any suggestions for Discovery in 2010?

.....

Thank you very much for your collaboration!

In case you'd like to receive a summary of the results of this investigation, please write here your e-mail address.@.....

Appendix 2. Topic list for interviews during Discovery Festival 2010

Good evening,

Tonight you are visiting Discovery Festival 2010, a night full of science, art, music, dance and culture. We would like to ask you some questions about Discovery Festival. The aim of this interview is to get some information from visitors like you. Your information and your opinion can help to improve this event in the future. The interview will take about ten minutes. Thank you in advance for your time!

1. What have you seen/heard/experienced so far at this event?
2. What do you consider the most interesting/amusing activity of Discovery?
Why?
3. What part or activity of Discovery do you like least? Why?
4. Are there any subjects that you miss in this event? If so: what subjects?
5. At this event science is combined with music and art. What do you think about this concept?
6. What image do you have of science?
7. What image do people in general have about science, in your opinion?
8. What do people in general think about an event like Discovery Festival in your opinion?
9. What is your overall judgment about Discovery Festival 2010?
10. What is your profession?
11. What is the highest education that you accomplished?
12. What is your age?
13. What suggestions do you have for Discovery Festival 2011
(subjects/activities)?

Thank you!

Appendix 3. Ideas and suggestions for Discovery Festival 2011

This appendix shows a categorized list of all remarks given by visitors of Discovery Festival 2010

Organisatie / indeling

- minder geluiden door elkaar
- lounge beter afschermen qua geluid en licht. Maakt 20PK lezingen beter te volgen.
- geen irritant geluid tijdens film experiment
- duidelijker bordjes met wat er gaande is bij bepaalde exhibits en shows
- geen drank via munten, rijen voor munten zijn vervelend. Duidelijkere richtingaanwijzingen.
- alle verdiepingen open zou leuk zijn!
- ingang aan de hoofdingang, net als vorig jaar!
- muziek aan de andere zijde van het schip
- zorg dat de organisatie beter op de hoogte is (wat is waar te vinden etc)_
- bnu is de massa heel verspreid, maakt het gevoel 'weinig mensen', te individualistisch. maar misschien past dat ook wel bij de wetenschap, het kan gezelliger,,
- minder verdiepingen open, zodat het sneller vol en gezelliger is. Verder prima organisatie! Ga zo door!
- regel een betere doorstroom naar de 5e verdieping, zeker als niet met de trap mag, plan dan geen 'act' in de lift, wat een waanzin
- moeite met het vinden van de muntverkoop

Gerelateerd aan locatie: NEMO

- beter onderscheid tussen: Wat is Discovery Festival, wat is Nemo. Brede communicatie, ook real-time vanaf event
- andere locatie?
- ik vond het niet helemaal duidelijk wat nemo was en wat discovery
- meer zaken die niet van NEMO zelf zijn

Muziek

- en meer metal muziek programmeren. Gitaar bands.
- De dansvloer is wat verlaten...
- betere geluidsinstallatie, het klinkt hier zo doff
- variatie in muziekprogrammering, meer kunst en sociale experimenten
- dubstep
- minder luide muziek
- verschillende soorten muziek (klassiek/wereld)
- danszaal groter en gezelliger

Programma / inhoud / thema

- nog meer ruimte voor spontane inzichtvorming
- minder dingen om te lezen en meer dingen om te doen

- meer muziek ruimtes + meer live experimenten. Echter, het festival heeft al heel veel leuks dus waarschijnlijk zal het qua budget niet allemaal haalbaar zijn.
- er mag van mij soms wel wat dieper ingegaan worden op het gekozen thema, het is nu en dan toch een beetje oppervlakkig.
- meer de connectie tussen wetenschap en maatschappij leggen, waarom is de wetenschap zo belangrijk voor 'normale mensen?'
- evolutionaire speltheorie!!!
- meer activiteiten die de connectie aangeven tussen wetenschap en dagelijks leven. Zo maak je het ook voor alle mensen interessant en raken ze nog meer gefascineerd door wetenschap. Nu is het veel wetenschap, maar is de connectie met alledag voor niet-wetenschappers is soms lastig te maken
- meer kunst meer film
- meer festival specifieke kunst
- DEBAT!
- ja, multimedialezingen implementeren

Overig

- werk van Chantalla, Pleiter en Tarek, zoals nu het planetarium
- ja, meer interactiedialoogsex
- meer gratis bier/alles
- meer biertappers :)
- vettere life experimenten en meer duidelijkheid over de wachttijd (of gewoon minder) wachttijd.
- laat mij optreden: <http://www.youtube.com/user/abhistadevata> of <http://twitter.com/textforincome> & rageneration@gmail.com!!!!!!!!!!!!
- English!
- more english stuff!
- iets te eten
- goedkoper maken!
- wat is de link tussen overheid en wetenschap? doet de overheid iets met nieuwe ontwikkelingen?
- de mensen in blauwe shirtjes weten bar weinig
- nee ik ben er net en vind het erg leuk bedacht iig
- straattheater
- live muziek op dek 2 plaatsen

Appendix 4. Quotes from interviews Discovery Festival 2010

Uitspraken over het imago van de wetenschap

“Het klinkt een beetje cliché misschien maar wetenschappers ontdekken nieuwe dingen”.

“Over het algemeen is het idee dat wetenschap door mensen wordt gedaan met grijze haren maar eigenlijk zijn er juist heel veel jonge mensen met wetenschap bezig. Jonge mensen kijken altijd wel naar nieuwe dingen”.

“De wetenschap daar kun je in blijven ontdekken. Dat moet ook natuurlijk. We moeten steeds verder kunnen. Dat is heel goed voor de ontwikkeling”.

“Ik denk er zelf heel positief over maar ik denk dat er best veel mensen zijn die denken, mwah. Dat hoor je wel eens. Ik denk dat dat een beetje ligt aan waar je interesses liggen”.

“I look at science as something that I don't really get a lot involved with”.

“I would say most people dislike science classes. Because it is difficult and boring”.

“Ik denk dat wetenschap een heel stoffig imago heeft en dat dit soort evenementen dus heel belangrijk zijn”.

“Als je vraagt wat is wetenschap..., ja dat verandert ook telkens, dat groeit ook weer. Je kunt het eigenlijk niet weten. Het inzicht van nu is heel anders dan vroeger”.

“een vriend studeert wiskunde aan de VU. Laatst hadden we het over onderzoek doen en hij kon zijn verhaal niet vertellen omdat hij dacht dat iedereen het toch niet zou begrijpen. Dat beeld is kenmerkend voor de mensen die ik ken die zich met wetenschap bezig houden”.

“de gemiddelde Nederlander ziet wetenschap als een linkse hobby: liever een nieuwe snelweg dan een wetenschapper erbij, dat is de gedachte”.

“Het gaat voor mij om het ontdekken van nieuwe dingen en de beeldvorming van het ontdekken van hoe alles in elkaar zit. Ik denk dat het op gewone mensen geen directe invloed heeft, maar uiteindelijk natuurlijk wel. Alleen wordt dat meestal niet zo beseft met betrekking tot de wetenschap”.

“Ik denk dat de gemiddelde Nederlander een beetje een stoffig beeld heeft van de wetenschap. Ik denk ook dat veel mensen er eigenlijk nooit over nadenken en er dus niet echt een duidelijk beeld van hebben”.

Uitspraken over Discovery 2010, onder andere over de combinatie van muziek, kunst en wetenschap

“de combinatie van wetenschap, muziek en kunst maakt de wetenschap wat sappiger, wat aantrekkelijker voor een groter publiek. Wetenschap gaat vaak om mensen die wetenschap bedrijven, gaat vaak om het uitzoeken van heel specifieke dingen en als je nou zoiets combineert met muziek, dat is natuurlijk iets waar iedereen verstand van heeft, tot op zekere hoogte. Dat trekt mensen ook weer aan, dat is in ieder geval iets waar ze iets van af weten”.

“I think it could be quiet interesting for most people, because this event has turned science into something more fun, because it has dance and beer and it is more like a social event than just science”.

“I would give it an 8 because it is well organized, there are a lot of things you can visit, really good turnout with people, the variety of things to do...yeah, it's good”.

“Ik denk dat iedereen wel het nut inziet van dit evenement. Alhoewel ik ook wel vrienden heb die vanavond niet mee wilden omdat ze liever naar de film wilden of naar de kroeg. Het is en blijft een wetenschapsding, en misschien moet je wel opletten”.

“Het is een hele mix van mensen, mensen die in wetenschap geïnteresseerd zijn en mensen die het leuk vinden om slechts een keertje te komen kijken. Dat lijkt me een onderdeel van wat er vanavond moet gebeuren”.

“Aan de ene kant is het een leuke manier om NEMO in beeld te brengen. Aan de andere kant is het moeilijk te zeggen in hoeverre de mix van muziek en wetenschap werkt. Het is een grappige mix”.

“Ik denk dat Nederlanders in vergelijking met andere landen, veel tijd en aandacht besteden aan wetenschap. Ik denk dat dit meer het geval is dan bij andere landen in Europa”.

“Het is heel interessant, ik hou van dit evenement. Het is uitzonderlijk, muziek, mensen, wetenschap, drinken, heel leuk allemaal!”.

“Het publiek is erg jong, universitair geschoold en braaf met de studie bezig. Het is een beetje preken voor eigen parochie. Het evenement zou breder georganiseerd moeten worden. Als je ‘de wetenschap’ iets laat organiseren dan wordt het ‘narrow minded’ en de diepte in. De mensen krijgen dan geen algemeen beeld van de wetenschap. Het is niet toegankelijk voor de brede massa”.

“Het blijft toch een nerd-gebeuren en dat is moeilijk te doorbreken, ook al stop je er muziek bij”.

“De combinatie van wetenschap met muziek en kunst is verrassend, ik heb nooit eerder zoiets meegemaakt. Je merkt ook aan het publiek dat het een niet veel voorkomende combinatie is, want sommige mensen lopen echt rond zo van ‘wat doe ik hier eigenlijk”.

“Sommige mensen moesten heel hard lachen en dachten dat het een nerd-feest zou zijn. Dat dacht ik trouwens eerst zelf ook. Maar uiteindelijk is het nerd-gehalte niet zo heel erg hoog”.

“Je moet wel nieuwsgierig zijn, omdat het wel anders is dan andere feesten”.

“Het is een beetje onduidelijk wat nu precies het idee is. Maar nu ik hier ben begrijp ik het ook wel. Juist het vage beeld is ook wel verrassend”.

Suggesties die voortkomen uit de interviews

- De combinatie van muziek en wetenschap werkt niet altijd, omdat de muziek soms stoort als iemand wat probeert uit te leggen. En de cocktails mogen groter. Misschien een live experiment cocktails maken!
- De lezingen in een aparte zaal houden. Nu was er teveel last van de muziek en de mensen die aan de bar stonden of drank bestelden.
- Meer duidelijk een accent leggen, of het is een discotheek of niet, het loopt nu wel erg door elkaar.
- Toegankelijker maken en breder profileren. Niet alleen op de VU promoten maar het breed neerzetten. Bijvoorbeeld door het niet in NEMO te laten plaats vinden maar in een gebouw wat niet ‘wetenschappelijkheid’ uitstraalt, de HNM of de Arena. Dat is algemener bekend.