

Discovery 09
A study on publicity, experience and potential impact

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Preface

Since 2006 the Very Disco Foundation in Amsterdam organizes the yearly event Discovery. The Cultural Studies Foundation in Amsterdam was asked to do research during this event in order to get more insight in the experiences of visitors and in the way they evaluate 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 be in-dept interviewed about Discovery 09. Thanks go also to the interviewers: Maud van Beek, Maarten de Boer, Robin ten Brink, Laurens Higler, Lotte Windig and Susan Woelders for collecting more than 180 questionnaires and 12 in-dept interviews. And last but no least we like to thank the organizers of Discovery 09 for their collaboration before and during the event, and their support by making the online survey possible. 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 2009

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1. Aim of the study

Discovery, a yearly event in which contemporary art and recent scientific developments are combined into one format: a night of arts and science, has been organized since 2006 and has been the Dutch branch of European Researchers' Night since 2007. The party in The Netherlands, in 2009, was held in NEMO, a science museum in Amsterdam. Also this year the program was a mix of art, music, culture and science, like announced on the website www.verydisco.org and in the program magazine.

From the very beginning, the idea behind Discovery has been to improve the image of science and scientists by bringing young, enthusiastic scientists in contact with an audience in a cool atmosphere in which artistic performances, like live music, play an important role next to science. That means that Discovery aims at a public consisting of participants that are both familiar and not familiar with science and scientists, and to offer them scientific activities that do not focus on discoveries, but on the process of discovering and on the people doing the discovering.

Since the start in 2006 the target group consists of a comparatively young public, aged between 18 and 40. About 1150 people visited Discovery 09.

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 09 has been experienced by the public, their image of science and scientists, their evaluation of the program of Discovery 09, and their ideas and suggestions for the next edition of Discovery in 2010.

After presenting the research questions and the research design, in chapter 2, we'll pay attention to the background of the visitors of Discovery 09 in chapter 3; the publicity campaign in 2009 in chapter 4; the images of science and scientists in chapter 5, and the evaluation of the event by the visitors in 2009 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 2010. 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.

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 09?
2. How effective have the different news media been during the publicity campaign for Discovery 09?
3. What image do visitors of Discovery 09 hold of science and scientists?
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 a sample of 186 visitors during the night in which Discovery 09 took place: September 25, 2009, from 21.00-04.00 h in NEMO, Amsterdam. The survey was carried out with the Internet research tool eXamine (Roelofsma, Bottema, & Smeets, 2005).

In addition to the survey a small selection of 12 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 09 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; the in-depth interviews were registered on tape. For the purpose of the analysis the interviews were (partly) transcribed, categorised, and analyzed by using procedures of qualitative data-analysis.

3. The visitors of Discovery 09

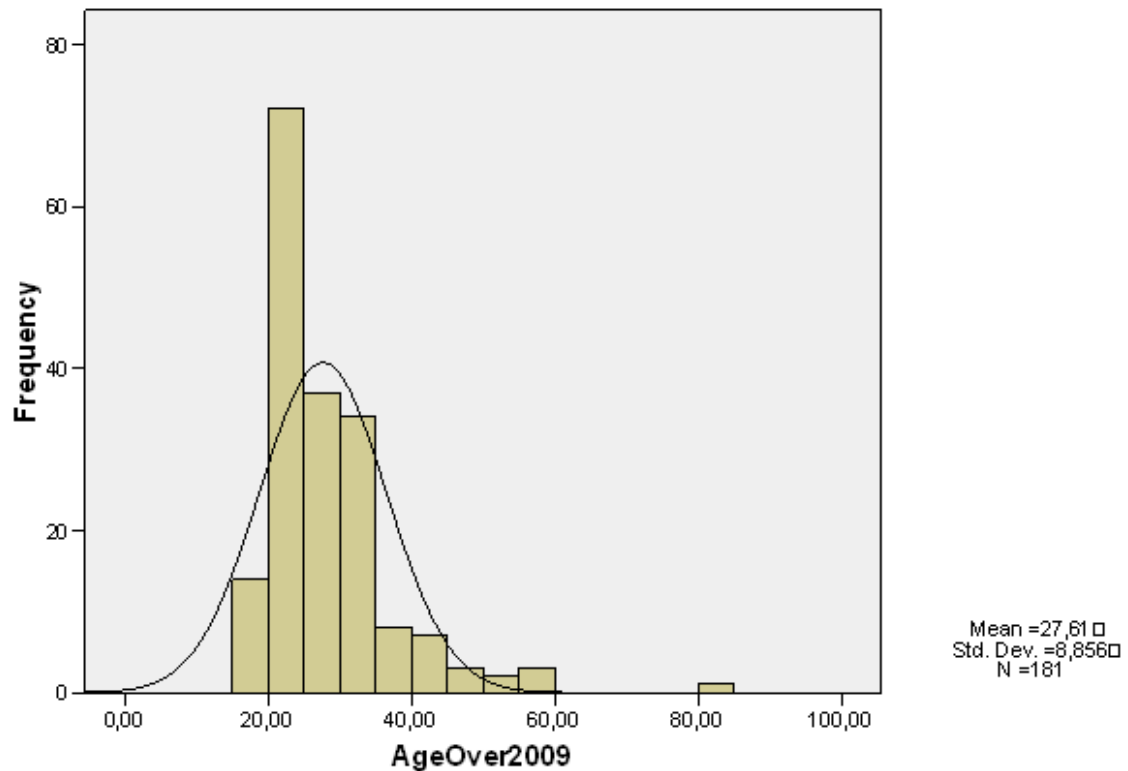
Discovery 09 was visited by about 1150 people, of which 54% were female. The mean age of the visitors was 27.6 years (SD=8.86)

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 09

<i>Completed level of education</i>	<i>Frequency</i>	<i>Percentage</i>
Elementary School	1	0.6
Lower secondary school (LBO / VMBO / MAVO / MULO)	2	1.1
Upper secondary school (HAVO)	15	8.3
Upper secondary school (VWO / Gymnasium / HBS)	45	24.9
Vocational training (MBO)	6	3.3
Polytechnics (HBO)	33	18.2
University (WO)	79	43.6
n	181	100

Figure 2. Histogram of the age visitors of Discovery 09



The data presented in table 1 and figure 1 show that Discovery 09 was visited by comparatively young people with a high educational level. Since 2007 the

mean age has gone down. In 2009 more visitors in the age of 25 years and younger visited Discovery than in 2007 (see also Koolstra, 2008; 2009). 61.8% of the respondents reported to have obtained a bachelor or a masters degree. This is a high percentage compared to the national average of 32.2% of the workforce (CBS, 2009). 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>Frequency</i>	<i>Percentage</i>
Very important	65	34.8
Rather Important	88	47.1
Neutral	21	11.2
Rather unimportant	9	4.8
Very unimportant	0	0
Don't know / no opinion	4	2.1
n	181	100

Without any doubt science is perceived to be important in the lives of nearly all visitors (82 percent finds science rather or very important). This result is about the same as was found in the sample of Discovery 2008 (then 83%) although the sample is not quite comparable with the sample of 2009 (see Koolstra, 2009). Put into a broader European 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 the visitors of Discovery 2009 have an above-average relationship with science.

The question rises: how did Discovery manage to attract these visitors?

4. The effectivity of the publicity campaign around Discovery 09

The publicity campaign around Discovery 09 took place in August and September 2009. Several media have been used, like Internet (the website www.verydisco.org and social network sites like Facebook, Hyves and Twitter) and posters. In the weeks before the event billboards were placed Amsterdam. The campaign was primarily oriented towards potential visitors in and around Amsterdam.

The different ways in which visitors told to be informed about Discovery 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 09.

<i>Way of contact</i>	<i>Frequency (number of times mentioned)</i>	<i>Percentage* (n=181)</i>
Friends / Family	98	54.1%
Somebody involved in the organization	44	24.3%
Different (not specified)	37	20.4%
University	19	10.5%
www.verydisco.org	16	8.8%
Visited last year	15	8.3%
Facebook / Hyves/Twitter	14	7.7%
Newsletter / Mailing list	9	5.0%
Poster public space	6	3.3%
Newspaper / Magazine	6	3.3%
Radio / Television	1	0.6%
Times mentioned	265	146.3%

* The total percentage is more than 100 because could mention more than one source of information.

The data in table 4 clearly shows that informal contacts (friends, family, somebody involved in the organization), mentioned more than 78 percent, seem very important for people's decision to visit or not to visit Discovery, and that the website and social network sites played a comparatively modest role in the publicity campaign. The same has been found during the evaluations of the publicity campaign around the 'National Science Week' (until 2007) and 'October Month of Knowledge (since 2008) (see e.g. Van der Veer & Van Elfrinkhof, 2008; Van der Veer & Groven, 2009).

Several respondents from the interviews mentioned that they missed publicity for the event. Like one of them said: *"the promotion of the event could be better. Normally we make sure that we are very well informed about parties in Amsterdam, but this promotion didn't reach us"*.

5. Images of science and scientists

Discovery 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 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 to develop a new measuring instrument with the help of experts (colleagues of VU University Amsterdam) 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. The answers are 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).

Table 5a. The image of science among visitors of Discovery 09

<i>statement</i>	<i>Positive Image (score=1)</i>	<i>Non-positive Image (score=0)</i>	<i>Total (n=186)</i>
1. We put too much confidence in science (disagree).	56.2%	43.8%	100%
2. Generally speaking science does more wrong than good (disagree).	69.7%	30.3%	100%
3. Thanks to science there is progress (agree).	81.6%	18.4%	100%
4. Thanks to science people live longer (agree).	80.0%	20.0%	100%
5. Science makes life more pleasant (agree).	61.0%	39.0%	100%

Table 5b. The image of scientists among visitors of Discovery 09

<i>Statement</i>	<i>Positive Image (score=1)</i>	<i>Non-positive image (score=1)</i>	<i>Total (n=186)</i>
6. Scientists are so occupied by their work that they do not know what happens in the rest of the world (disagree).	53.3%	46.7%	100%
7. The profession of scientists is fascinating (agree).	86.1%	18.9%	100%
8. Scientists have a poor social life (disagree).	49.0%	51.0%	100%
9. Scientists are prepared to work long days (agree).	66.6%	33.4%	100%
10. Scientists create solutions for problems in society (agree).	71.5%	28.5%	100%

The findings in tables 5a and 5b show that the overall image of both science and scientists is positive. The reliability of the total 10 item-scale (possible scores from 0-10) is satisfactory: Cronbach's alpha = .74. The mean score = 6.8 (SD=2.5).

To get more insight in the way the image of science and scientists is constructed by visitors of Discovery, and also to develop a more economical instrument with fewer items, it was decided to construct 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.

MSP is a method of constructing cumulative attitude scales from Likert-type summated rating scales, like the ones that we used in our online questionnaire, and is essentially a probabilistic version of Guttman scale analysis (Dunn-Rankin, Knezek, Wallace, & Zhang, 2004; Sijtsma & Molenaar, 2002; Pernice, Van der Veer, Ommundsen, & Larsen, 2008). The aim of the MSP is to order subjects along a certain latent trait T. This ordering can also be done with items measuring an attitude like the image that one has of science and scientists. The probability P to give a positive answer on an item *i* is dependent on the amount of T a subject S possesses. The result of the MSP (Molenaar et. al, 2000) is the location of a set of discriminatory items within sets of Likert-type items. This procedure computes a measure of scalability (Loevinger's *H*) for each single item and for sets of items. Loevinger's *H*. An item is considered part of a cumulative scale if it reaches or surpasses an *H*-value of .30.

In table 6 the results are presented of the MSP in which the 10 items were analyzed. As a result of this analysis a cumulative scale was detected: *the Image of Science-scale*, including 6 statements about science and scientists.

Table 6. *The Image of Science-scale*: an instrument for measuring the image of science and scientists (scale coefficient H=.45; rho=0.74; scale mean score = 4.6, SD = 1.64)

<i>Item</i>	<i>Mean</i>	<i>Item H</i>	<i>Z</i>
a. The profession of scientists is fascinating.	.88	.60	11.58
b. People live longer thanks to science.	.85	.47	9.82
c. Thanks to science there is progress.	.85	.51	10.60
d. Scientists create solutions for problems in society.	.74	.39	8.49
e. Scientists are prepared to make long working days.	.71	.32	6.75
f. Science makes life more pleasant.	.64	.48	9.04

The scale presented in table 6 tells us more specific than the above presented 10-items scale how the image of science and scientists is constructed. 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*, and comparatively least visitors agree on item *f*. 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 disagrees. The mean score on this *Image of Science-scale* of all the visitors in the

sample is 4.6, which means that most people agree with the statements a through d. So by using this cumulative, and more economical measuring instrument, we may conclude that the visitors of Discovery 09 express have a very positive image of science and scientists (although social desirability may play a role in their response).

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.

Another image that comes forward from the interviews is that science is sometimes difficult to understand. There is a distance between science and daily life. People in general haven't got a clue what scientists do, what kind of research they do and what it is used for. A stereotype about science comes forward from the interviews. One of the respondents said: *"people have no idea about science. It's removed far away from daily life. They know about the results of science when it's used in daily life, for example medicine or the iris scan. They have no idea how difficult it is"*. Another respondent formulates: *"I think that in general they think that scientists are boring people, who live in ivory towers and try to invent new things while the world turns around and nobody is waiting for their results. Smart things, however, but the smartness is too much for the average public"*.

This is an interesting finding because we know from the literature (e.g. Noelle-Neumann, 1980) that in the image that people hold about the image of other people concerning for example science, social desirability plays a less important role compared to their own image. And that means that the image of science among the general public is probably not very positive.

Finally, there is a significant, although not strong, relation between image of science and educational level (Pearson's correlation=.20, $p < .01$) meaning: the higher the educational level, the more positive the image of science and scientists.

6. Evaluation of Discovery 09

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 are presented in table 7.

Table 7. Evaluation of activities during Discovery 09

Type of Activity	Number of responses	Mean grade (scale from 1 to 10)	Standard deviation	Non-applicable
Live experiment	116	7.5	1.61	68
Music	123	7.1	1.98	61
Games	97	6.9	1.83	87
Art programme	104	6.8	2.04	80
Film	86	6.4	2.05	98

All activities are evaluated positively. The mean grade for all activities is 7, and the live experiments were evaluated most positively compared to the other activities.

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 09.

The interviewees are enthusiastic about the combination of science, music and art. It is new and makes science more accessible and modern. For most of the respondents this total concept was the reason to visit the event. One of the interviewed visitors said: *“the thing I like most is that there is art and music, because when it was only science that was presented here, I would not come because I think that’s boring”*.

Discovery also makes science accessible for the public. Especially the application of science is experienced positive. Being able to see, to hear and to feel things brings science closer to the public. *“The combination of science with art and music is perfect. It becomes tangible. Often science is so clinical, although that word is not correct. When you see things move and see things that are in use, that makes it more manifest and realistic”*.

An important comment from several respondents about Discovery 09 is that they experience the interactive parts of the program as the most positive. They like to do things themselves or want to be involved in experiments. They also like to discuss and have interaction with the speakers of the different stands. Although the music is experienced positively in general, it is also mentioned that the music was sometimes too loud to be able to pay attention to the other activities. Several respondents suggested to create quiet spaces for some activities, like discussions, during the next edition of the event. From that perspective, NEMO was not evaluated the best possible location by several visitors, because the space was experienced as being too open. Another remark about the location was that *“it was confusing which items belonged to the exposition of NEMO itself and which items were especially designed for Discovery 09”*.

7. The potential impact of Discovery

Discovery 09 attracted a young and comparatively highly educated public. The vast majority of them consider science very important in daily life. Discovery 09 has been a highly appreciated and for that reason successful event, and it is no surprise that the vast majority of visitors considers science very important in daily life.

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, although we have not been able to control for social desirability. The results reported in the previous chapters show furthermore that the format of Discovery – music, 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, more important than other publicity channels.

On the average the different types of activities were evaluated positively, whereas the interactive activities (live experiments) were evaluated the most positively. 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 irrelevant, captured inside an ivory tower, and generally inaccessible. 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 2009.

The current public is positive about Discovery 09. 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 could bring Discovery closer to the general aim of the European Researchers' Night: improving the image of science and scientists.

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Appendix 1. Questionnaire for web survey Discovery 09

Dear Visitor,

At this moment you are visiting Discovery 09, 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 collaboration!

1. In what way have you been informed about Discovery 09? (More answers possible)

<i>Way of contact</i>	<i>Frequency (times mentioned)</i>	<i>Percentage</i>
Friends / Family	98	37.0 %
Somebody involved in the organization	44	16.7 %
Different	37	14.0 %
University	19	7.2 %
www.verydisco.org	16	6.0 %
Visited last year	15	5.6 %
Facebook / Hyves	13	4.9 %
Twitter	1	0.4 %
Newsletter / Mailing list	9	3.4 %
Poster public space	6	2.3 %
Newspaper / Magazine	6	2.3 %
Radio / Television	1	0.4 %
Times mentioned	265	100 %

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	65	34.8
Rather Important	88	47.1
Neutral	21	11.2
Rather unimportant	9	4.8
Very unimportant	0	0
Don't know / no opinion	4	2.1
n	181	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>Total (n=186)</i>
Scientists are so occupied by their work that they do not know what happens in the rest of the world.	4.3%	21.0%	19.4%	33.9	19.4%	2.2%	100%
The profession of scientists is fascinating.	32.3%	53.8%	7.0%	3.8%	1.6%	1.6%	100%
Scientists have a poor social life.	3.3%	13.4%	29.0%	25.3%	23.7%	5.4%	100%
Scientists are prepared to work long days.	20.4%	46.2%	22.6%	3.8%	1.1%	5.9%	100%
Scientists create solutions for problems in society.	19.9%	51.6%	22.0%	3.8%	1.1%	1.6%	100%

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>Total (n=186)</i>
We put too much confidence in science.	4.3%	19.5%	18.4%	33.5%	22.7%	1.6%	100%
Generally speaking science does more wrong than good.	1.6%	5.4%	20.5%	30.8%	38.9%	2.7%	100%
Thanks to science there is progress.	29.7%	51.9%	11.9%	4.3%	1.1%	1.1%	100%
Thanks to science people live longer.	31.9%	48.1%	12.4%	3.8%	2.2%	1.6%	100%
Science makes life more pleasant.	23.2%	37.8%	29.7%	4.3%	3.2%	1.6%	100%

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>Standard deviation</i>	<i>Non-applicable</i>
Live experiment	116	7.5	1.61	68
Music	123	7.1	1.98	61
Games	97	6.9	1.83	87
Art programme	104	6.8	2.04	80
Film	86	6.4	2.05	98

6. What is your sex?

Female 54%
Male 46%

7. Year of birth 1981 (average)

8. What is your highest completed education?

<i>Completed level of education</i>	<i>Frequency</i>	<i>Percentage</i>
Elementary School	1	0.6
Lower secondary school (LBO / VMBO / MAVO / MULO)	2	1.1
Upper secondary school (HAVO)	15	8.3
Upper secondary school (VWO / Gymnasium / HBS)	45	24.9
Vocational training (MBO)	6	3.3
Polytechnics (HBO)	33	18.2
University (WO)	79	43.6
n	181	100

9. Any suggestions for Discovery in 2010?

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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 the qualitative interviews Discovery 09

Good evening,

Tonight you are visiting Discovery 09, a night full of science, art and culture. We would like to ask you some questions about Discovery. 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 in your opinion?

9. What is your overall judgment about Discovery 09?

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 2010 (subjects/activities)?

Appendix 3. Ideas and suggestions from the researchers

What could the results of our study 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.

1. 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 or another professional career. An improvement of the image of science and scientists of this category will likely have an impact on their professional choices. The target Group could also be extended by appealing students in the last years of their upper secondary or vocational training: those who are faced with the question whether to continue their education and, if yes, in what way.
2. 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. This also might mean that the event could be extended in time – starting already in the afternoon with a program suitable for a younger category visitor (16-18 years).
3. The scientific content of Discovery heavily leans upon beta sciences. Although it certainly will require some special creativity it seems worthwhile to import more findings of gamma (e.g. economics, psychology) and alpha (e.g. history) sciences into the program.

Appendix 4. Ideas and suggestions for the next edition of Discovery

Organisatie / algemeen / facilitair

- Betere organisatie bij de deur.
- Bij aanvang (rond 21u) was het wat chaotisch.
- Lezingen/kunstprogramma's in een meer afgezonderde ruimte. Dit om het beter te kunnen volgen.
- E-tickets waren erg onhandig: een e-ticket zou een namenlijst moeten vervangen. Dit was heel dubbelop.
- Duidelijker aangeven wat wat is (aangezien de gemiddelde bezoeker wel een biertje op heeft)
- Drank minder duur maken, in centrum Amsterdam betalen toeristen dezelfde prijs voor een glas bier dat 2 keer zo groot is.
- Meer plasgelegenheid, leuning en goedkoper bier
- Bilingual! More in English
- Strakker georganiseerd
- Meer vuilnisbakken
- Meer hip en trendy maken, meer grote namen.
- Meer een 'niet wetenschap sfeer' over het hele Memo
- In het kort, experimenteer eens iets meer
- De kunst, in de hal, duidelijker aandacht geven.
- Presentatie en techniek beter voorbereiden
- Niet meer in NeMo, Westergas werkte veel beter.

PR / Communicatie

- In het programmaboekje aangeven wanneer welke 20PK presentaties gegeven worden en meer interactie met publiek bij 20PK door ze de gelegenheid te geven vragen te stellen.
- Meer feest sfeer door het hele science center, nu is het geconcentreerd op een paar plekken. Duidelijk maken wat er wanneer gaande is.
- Betere PR.
- Meer PR.
- Duidelijker route .
- Duidelijker route!
- Routing kan beter.
- Meer uitleg op borden bij de tafeltjes, nu zie ik vaak niet wat het is waar ik naar kijk.
- Meer duidelijkheid waar je wat kunt doen/zien.
- Wegwijzers naar de in het boekje genoemde experimenten/demonstraties.
- Duidelijk aangeven wat waar en hoe.
- Vaker een nieuwsbrief aan mensen die ooit betrokken zijn geweest (ook bijv. over activiteiten in Bitterzoet e.d.).

Programma / Inhoud

- Leuk dat er veel te doen is maar het meeste is al in jaren niet meer vernieuwd en wel erg kinderlijk ingesteld. Wellicht meer 'serieuze' lezingen voor meer inhoudelijke diepgang.
- Minder kinderspelletjes, dit geeft de wetenschap niet goed weer. Kortom, jullie handhaven alle stereotypen van de wetenschap.

- Kies een interessant centraal thema i.p.v. wetenschap. Dat is even nietszeggend als 'iets over de samenleving'.
- Groter aanbod aan interactief programma misschien experimenten waar grotere groepen tegelijkertijd aan mee kunnen doen.
- De muziek eerder op de avond combineren met wetenschap, niet pas ergens laat op de avond. Meer erop toezien dat mensen oprecht ergens naar luisteren, zodat er minder gerumoerd wordt.
- Iets uitdagender.
- Meer proefjes.
- Meer onderzoeken experimenteren/presenteren in deze chille setting van disco/kroeg.
- Duidelijker programma,
- Meer humor/komische activiteiten in het programma.
- Elektronica, techniek, politiek.
- Grootse experimenten (lire) die de hele avond duren.
- Er mag wat meer de diepte ingegaan worden.
- Meer diepgang, minder "snack-wetenschap", geef mensen echt iets mee, leer ze iets.

Interactie

- Meer interactie met het publiek tijdens de presentatie.
- Meer uitleg bij het aandelenexperiment.
- Net wat meer interactie. Ik mis de games en proefjes van vorig jaar. Toen waren het er net wat meer. Maar ga zo door! De opzet is fantastisch!
- Meer interactieve opstellingen.
- Nog meer interactieve demo's. Deze editie was al heel erg gaaf.

Specifiek

- Misschien de sociale voordelen van andermans egoïsme?
- Filmquiz weer terug.
- Een barterdeal met Kijk.
- Reint de Kgeenstijl.nloning laten spreken.
- Wetenschapsfilosofie.
- Een dresscode!
- Bier voor minder en wat meer actie.
- Goedkoper bier.
- Drank minder duur maken, in centrum Amsterdam betalen toeristen dezelfde prijs voor een glas bier dat 2 keer zo groot is.
- Sprekers zijn moeilijk te verstaan.
- Muziek bij alle standjes.
- Vroeger muziek --> Lounge ofzo?
- Laboratorium jassen, nano-computers, soldeer bouten, halverwege klapt de stroom eruit.
- Kleuren van programmaboekje inverteren.
- Openstellen dakterras.

Overig

- Betere muziek AUB.
- 9-box.

- Poster presentaties/ of grote scherm presentaties als digitale media beter van toepassing is, en meer spelletjes (interactie).
- Meer drinkmuntjes voor de vrijwilligers!
- Misschien een leuk idee om een workshop filmpjes maken zoals bij Wise bits wordt getoond te maken. Dat je zelf je eigen wise bit mag creeren.
- MEER MUZIEK.
- Vaker feestjes!
- Goedkoper bier, meer feesten, meer uitdaging in de experimenten. De experimenten zijn voor 10 jarigen, niet voor 20-30.
- Cheers.
- Meer sexy.
- Meer dingen om te doen qua ontwikkeling, dus buiten de NeMo activiteiten.

Appendix 5. Quotes uit interviews Discovery 09

Uitspraken over het imago van de wetenschap

“Over het algemeen wordt er te moeilijk over gedacht. Het is juist voor iedereen toegankelijk. Ik ben zelf geen wetenschapper, maar ik snap het ook”.

“Wetenschap is als je de vraag falsifieerbaar stelt. Kritische houding is erg belangrijk. Dat is uitvoerig behandeld op de TU, dus als jij zegt wat is wetenschap dan denk ik: “oh, niet weer”, want dan komt er zo’n vervelende professor staan en die zegt: “zo, nou zeggen jullie het maar even”, en dan 1,5 jaar later heb je weer dat college”.

“Wetenschap is de ver van mijn bed show voor veel mensen. Ze hebben er geen idee van. Alleen de uitkomsten wel (bijvoorbeeld medicijnen, irisscan, etc). Ze weten niet hoe ingewikkeld het is”.

“Wetenschap is belangrijk, we kunnen er veel van leren. Een analytische kijk is belangrijk”.

“It’s good that there are scientists around to teach us some things”.

“Ik denk positief over wetenschap, het heeft echt een zinnige bijdrage. Ik denk dat veel mensen blij zijn dat het gedaan wordt”.

“Wetenschap is toekomst, een zoektocht naar de waarheid. En mijn werk, dus dat scheelt”.

“Beeld van andere mensen over wetenschap: het beeld is hetzelfde, niet heel interessant. Door nieuwe programma’s op t.v. zoals ‘het beste idee van Nederland’ wordt het wel steeds interessanter denk ik”.

“De combinatie van wetenschap, kunst en muziek is perfect. Dan wordt het tastbaarder. Wetenschap is vaak zo klinisch, tja, dat is niet helemaal het juiste woord. Als je dingen ziet bewegen, dingen die in gebruik zijn, maakt het tastbaarder, realistischer”.

“Wetenschap is nodig voor de vooruitgang van de mens, modernisering, schonere energie, dingen die het leven makkelijker maken”.

“Heel veel mensen begrijpen niet hoe wetenschappers lang met dingen bezig zijn, dure onderzoeken doen, wat dat nou allemaal voor nut heeft. Onderzoek doen is duur maar het is niet direct te zien wat voor toepassingen het heeft in het dagelijks leven. Veel mensen leggen de link niet tussen bepaalde onderzoeken en het dagelijks leven”.

“Het leukst zijn de experimenten die relatief eenvoudig waren. Wetenschap staat vaak heel ver weg van de mens. Ik vind het leuk als er met eenvoudige dingen interessante doelen kunnen worden bereikt. Ik vind dat wetenschap eenvoudig gehouden moet worden”.

“Dat ze alles in een hokje willen plaatsen en een naam geven, maar dat ze daardoor het geheel uit het oog verliezen als het ware. Ik ben meer van holistisch denken en wetenschap is vaak deductionistisch. Het geheel is meer dan de som der delen als het ware. Aristoteles is dat al begonnen, die begon al in vakjes in te delen en eigenlijk is in vakjes indelen discrimineren”.

“Mensen hebben wel het idee dat het het leven steeds makkelijker maakt maar dat het wel steeds verder van de normale mens af komt te staan. Ik denk dat heel veel mensen daar niet over nadenken en daardoor niet bewust zijn van het feit dat ze eigenlijk alle controle verliezen omdat ze niet weten waar wetenschap over gaat”.

“Mijn beeld van wetenschap is positief, ik kom zelf uit de wetenschap, ben er zelf mee bekend. Heel interessant, heel belangrijk. Daarmee komt men verder. Dé manier om uit te vinden wat wel en niet werkt”.

“Ik denk dat over het algemeen niet echt wordt begrepen wat wetenschap is. Dat komt door de manier waarop het in het nieuws komt, waarop men het associeert met uitvindingen en onderzoekjes, maar de basis van wetenschappelijk onderzoek wordt volgens mij nog te weinig begrepen, dat het gewoon is van de juiste vragen stellen”.

“Ik vind wetenschap niet suf, ik vind het wel boeiend. Het heeft voor mij geen suf imago, maar ik kan me voorstellen dat het voor anderen wel een suf imago heeft.... De tijd en de ruimte hebben om je nieuwsgierigheid te voeden “.

“Het beeld van een beetje saaie, suffe mensen die in ivoren torentjes slimme dingen zitten te bedenken, terwijl de wereld gewoon doordraait en niemand daarop zit te wachten. Wel slimme dingen, maar die slimheid gaat de gemiddelde mens vaak te boven”.

“Ik denk dat mensen vaak vinden dat wetenschap nuttig moet zijn, omdat het anders te onzinnig is. Ik ben het daar niet mee eens. Je hebt fundamentele wetenschap nodig om verder te komen in de maatschappij, zonder dat het verder een direct doel heeft of een vraag beantwoordt, maar door de fundamentele wetenschap kom je verder in dingen die je van tevoren niet had kunnen voorspellen. Dus alleen maar toegepaste wetenschap vind ik heel mager, een soort van uitpuutelijk”.

Uitspraken over Discovery 09, onder andere over de combinatie van muziek, kunst en wetenschap

“Ik vind het vooral ook heel leuk dat kunst aanwezig is en ook muziek, want als het alleen wetenschap zou zijn zou ik niet gekomen zijn omdat het me heel saai lijkt. Leuk dat kunst en muziek vernieuwend is en niet superstandaard, dat vind ik echt heel leuk. Leuk ook dat er afstudeerders staan”.

“De combinatie is leuk, een beetje spelen en dansen tegelijk”.

“Het leukst van Discovery zijn de demonstraties. Niet alleen teksten maar dat je daadwerkelijk kunt zien hoe bepaalde theorieën werken, dus proefjes die je zelf kan doen, dat is het leukst”.

“De combinatie van wetenschap met kunst en muziek is perfect. Dan wordt het tastbaarder. Wetenschap is vaak zo klinisch, al is dat niet helemaal het juiste woord. Als je dingen ziet bewegen, dingen die in gebruik zijn, dat maakt het tastbaarder en realistischer”.

“Het zou me niet verbazen als het wordt gezien als een soort ‘nerd-feestje”.

“Ik was meer uitgegaan van een dansfeest, dans en performance. Ik had meer het accent daarop verwacht. Ik heb meer het idee dat het accent ligt op een beetje rondsjouwen en een beetje leuk experimentjes doen en je laten verrassen”.

“Ik vind het piramidespel heel leuk omdat ik het leuk vind om met dingen mee te doen en een beetje actief te zijn”.

“Ik mis een paar wiskundige dingetjes en een paar echte biologendingen, aangezien het toch allemaal wetenschap is. Er is heel veel over mens en heel veel over techniek vind ik”.

Suggesties die voortkomen uit de interviews

- Meer stands, er is te weinig voor de ‘algemene persoon’. Voor elk wat wils.
- Het is een groot oppervlak, alles verwaait. Dat is anders dan de website doet vermoeden.
- In het begin is het heel stil, doe dan een achtergrondmuziekje, dat is minder klinisch.
- Verwarrend dat reguliere Nemo zaken en Discovery door elkaar heen lopen. De attracties van Nemo doen het niet allemaal, maak dat dan duidelijk.
- De interactie tussen mensen die naar het event komen is laag.
- De bewegwijzering is niet optimaal. Het programmaboekje is alleen in het Nederlands.
- Meer interactief in plaats van decoratief.
- Muziek los van wetenschap in een ruimte.
- Promotie kan beter. We zijn meestal goed op de hoogte van feestjes, maar deze promotie heeft ons niet bereikt (gekomen via relatie).
- Ook iets doen met taalwetenschap. Iets met spraak, dat je met signaaltjes spraak kan uitbeelden en zo. Dat kan je visualiseren.
- Meer verwacht van kunst, moderne kunst. Stellingen, dingen die bewegen. Dus veel meer moderne kunst waar wetenschap ook in terugkomt, op bepaalde natuurwetten gebaseerd.
- Breder adverteren, bijvoorbeeld in tijdschriften als Kijk.
- Het idee van een combi is leuk, maar de uitvoering is wat minder. Wel heel erg gescheiden. Interessanter als het gemengd wordt, bijvoorbeeld op basis van toevallige computerresultaten muziek produceren. Dan wordt het echt interessant.
- Muziek is soms storend.

- Meer theater.
- Nemo is niet de leukste locatie.
- Het zou leuk zijn om wat kleine dingen te hebben waar je wat kunt doen, met wat kleinere ruimtes waar je je wat meer kunt verdiepen, waar je kunt kijken hoe het zit of kunt kijken hoe iets werkt.
- De ruimte is te open, jammer dat je niet een paar plekken hebt waar je jezelf kunt verdiepen.