

Decide Evaluation Report



Sally Duensing and Andrea Lorenzet

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Summary of Key Findings

Between January 2006 and July 2006 between 1200 and 1500 people attended Decide events in 13 institutions in 12 EU countries. This evaluation study used qualitative and quantitative methods such as video and audio documentation, observation reports of the events, participant concept maps and pre and post event interviews to study the process, content and quality of interaction that occurred during the events.

The Dynamics of Interaction

- The observations and participant's comments all point to the effectiveness of Decide as forum that encourages interaction discussion and examination of your own and other's ideas.
- Participants valued the opportunity to discuss with others the scientific issues put forward by the Decide materials.
- Participants expressed particular appreciation of having other perspectives, people with different backgrounds or experience at the table.
- The Decide event discussions often dealt with the *dilemmas* that techno-scientific issues raise.
- There were varied ways groups approached the decision-making policy activity, some tried for consensus others used multiple individual solutions.

Changes and Gains

- The concept maps data indicated some notable changes in participant's thinking or understanding after participation in a Decide event, primarily through increased questions and increase of ethical terms used post event.
- Other changing factors observed were change of mind about an issue, transfers of ideas to other contexts, and an increased concern about an issue.
- Discussions were observed to increase in complexity over the course of the event, going from more simple opinion statements to statements that incorporated ideas from the Decide materials and referred to other people's perspectives.

Structural Features of Decide

- Participants were observed to have some initial moments of confusion in getting started.
- The story cards offered a quick way for people begin a discussion.

- Yellow cards were generally not used, but were appreciated.
- There were many variations on how and when groups distributed and used the information and issue cards over the course of the discussion.
- The decision-making process regarding key ideas of the discussion was difficult for some groups.
- Usually participants voted individually on each policy option and decided by counting the votes on each option, following therefore the formal rules; but it happened sometimes that an agreed opinion was reached by the whole group without going through the individual voting.
- Creating a fifth policy was found to be a useful way for participants to add comments and rebuttals to their policies.

Sustainability and Impact

- Decide impact went far beyond the initial project and the 13 European partners. Even if it is impossible to completely map all the new institutions, museums and groups that conducted decide events, a number of new uses of decide are documented.

Introduction: the activity

Funded by a grant from the European Commission, DG Research, Science and Society Programme - Scientific Advice and Governance, the Decide project was initiated by ECSITE, the European science center and museum network, to further science centers efforts to be active forums for dialogue on complex ethical issues in science and society. The grant provided funding to develop and hold Decide events across Europe at partner institutions.

Decide was developed as a tool for people to discuss and gain more insights in science and technology issues in response to needs for having a more involved and informed public throughout Europe. Current surveys and media reports have shown that people are very concerned about the latest developments in science and technology. At the same time there is a growing demand for greater public involvement in establishing science and technology policy. Decide is an innovative and experimental attempt in this direction. Through a collective table activity played in small groups, it provides an experience in which participants are called to inform themselves on the issues, to discuss them and to finally produce a shared policy option.

Decide covers six controversial subjects: xenotransplantation, nanotechnology, stem cells, genetic testing, neuroscience/brain enhancement and HIV/AIDS. For each topic, materials were developed featuring story cards, information and issue cards and a policy voting sheet of four policies with space for a fifth policy to be created by the participants.

In a typical Decide event, small groups of 6-8 people read, discuss and debate issue, information and story short texts on a given topic over the course of the event which last for about 1 ½ hours. Near the end of the event participants vote on policies regarding the topic.

Policy voting totals are collected by each institution and uploaded onto the Decide website, (www.playdecide.org). Results are displayed in total as well as country-by-country. The website has also a detailed description of the Decide activity and all of the materials on each topic which are downloadable and free of charge.

Between January 2006 and July 2006 between 1200 and 1500 people attended 64 Decide events (an average of 20 people per event). These events were held in 13 Decide partner institutions in 12 EU countries. The Decide materials were translated into 12 languages by partner museums (see appendix I).

Decide is an Ecsite project, funded by a grant from the European Commission, DG Research, Science and Society Programme – Scientific Advice and Governance. The consortium that developed Decide was composed by At-Bristol, Fondazione IDIS – Città della Scienza, Cité des Sciences et de l'Industrie, Heureka, Ecsite, in collaboration with nef, the new economics foundation.

Evaluation Overview

The central objectives of the Decide project as stated in the proposal to the European Commission were:

- 1) Raise European citizens' awareness and understanding of deliberative democracy methods among the larger public;
- 2) Produce a tool to conduct and facilitate deliberative consultations;
- 3) Monitor the change of opinion among the European public on contemporary science issues.

To evaluate the outcomes regarding these objectives of the Decide project, this evaluation used multiple methods, primarily qualitative, using data drawn from interviews, observations, video and audio documentation. Quantitative analysis came from concept map data (see appendix for list of data collected).

There were two levels of data collected:

- a broader documentation of the Decide events from the partner institutions primarily through reports from the institutions
- more in-depth documentation of 9 events at four institutions; two in Italy and two in the UK. Data included observation, video and audio documentation of the events, pre and post event interviews and concept maps by participants.

The evaluation activity presented in this report will focus on three main dimensions of analysis. The first concerns the dynamics of interaction, that is what concerns the features of the discussion and of the decision-making process of the game involving participants. The second will focus on the change brought by the game, and the last part will present findings on the structure of the game, including the use of the different materials, timing and decision-making with the policies. These three dimensions are divided only for analytical and data presentation purposes. In the action of the activity they are strongly interconnected and influence each other (for example, it's clear that more time for discussion influences the quality of the discussion and, vice versa, that if the discussion is poor, time will be influenced).

1. The Dynamics of Interaction

This section will analyze the communication process from the point of view of the interaction among participants, considering their personal evaluation of the process and their impressions, together with a close look at the dynamics of interactions which took place in the Decide sessions. To give some context for the interactions, here is a brief overview of a Decide event.

Event Overview

Decide is an informed discussion activity conducted in small groups (4-8 people) of friends or strangers. Events generally last 1 ½ to 2 hours. There are six different science ethics topics. The structure of the activity is the same for each topic and is described on a placemat that all participants have in front of them. Many events also have facilitators that introduce the event and informally go between the groups to offer a needed assistance or clarification on the activity.

The information on the topic comes from idea, issue, and story cards that are dealt out to everyone in the group during different phases of the activity. In each phase people select one or two cards they feel are key and take turns reading their selections out loud to the group and discussing why they feel they are important. In the later part of the activity, selected story, issue and idea cards are put into clusters that represent key ideas of the discussion. The final activity is for everyone to vote on four policy positions. The group decides whether or not to vote as a group or individually. Many of the Decide events concluded by having a plenary session in which the small groups discuss and share with the whole group some of the notable outcomes for them of the event.

Interaction and Discussion

Overall, participants seemed very happy and positively impressed by the opportunity to discuss with others the scientific issues put forward by the Decide materials. From direct observation and in review of the video data, few people seemed to be distracted or bored during the game. Confirmation of this often came in post event interviews.

“I liked the atmosphere - People listening to each other, teaching each other their opinions”
Female, 25, biochemistry PhD student UK

Even the most critical participants seemed interested, if not in the specific topics, on this opportunity of discussing following a method or a structure.

“It was quite easy for everyone to get into it very quickly I actually remember more about the social interaction than the content.”

Male, 33, museum exhibit director, UK

Some of the post event interview comments from participants were on the different points of view of the group, and the direct confrontation that was possible:

“The method is really interesting, because it is based on direct confrontation, on the relationship, so from this point of view it is interesting.”

Male, 37, engineer, Italy

“What I liked the most is that it was a moment of dialogue, especially about issues which I had not before discussed with anyone. And so this is a positive thing, the fact of being able to discuss.”

Male, 50, informatics engineer, Italy

“I liked a lot that so different and foreign people could be able to take part to the discussion without arguing (smiles). We tried to take into consideration all the different opinions which came out, but always in a very calm and serene way, and then time passed by in a very fast way and serenely”

Female, 32, cultural events promoter, Italy

Statements also pointed to the public-experts relationship, and the value of having an opportunity to articulate your opinion on issues which require one to listen to the others and to give advice which can't be reduced to a bit of information (yes/no):

“Because we are not experts (on this topic) we have different opinions that experts don't have. So in that sense I think our views are just as valid as theirs.”

Female, university student, UK

“It's a way to get closer to others, to know and understand what others think; it could be a good method to create a huge group of people who can build and communicate their own thought... using more than a simple cross, but creating a conversation.”

Female, 32, cultural events promoter, Italy

“Some of the biology in Decide was new to me. I'm not a biologist. We were able to ask a district nurse at the table about things, and

with the two doctor students (who were also part of the group) we had theoretical and clinical experience at the table.”

Male, 33, museum exhibits director, UK

The Decide events in London included two topic experts who gave a few minute introduction to key ideas of the topic from their perspective just before the event. Having these experts on hand to answer more in-depth questions and provide further information was appreciated by participants, but observations also show that they at times disrupted the flow of discussions at the tables.

Another interesting feature of the discussion activity recognized by participants was the opportunity to interact with people of a different age group, and to think about Decide as a cross-generational method:

“Surely useful (*about the activity*), because in the second group we had, there was a little boy, and it has been very useful to be able to discuss with a so much younger person and to see that he was able to understand what we were saying, even because he was 13 and he did not even studied at school some things. In my opinion this has been the most interesting part, to listen to everybody's opinion it is surely interesting.”

Female, 24, geologist, Italy

In addition, the materials of the activity also were credited by some as contributing to their participation in the discussion.

“The format of sorting through the cards, had a sort of awkwardness at first, passing around to make sure everyone had seen everything. But that soon ended as you began to pick things out that felt important to you and actually talk to the group about it.”

Male, 33, museum exhibits director, UK

Discussions often did not begin immediately, whether it was among strangers or people who knew each other. In most observations, discussion started after a silence period of 5-15 minutes in which cards were dealt out and people read through them to themselves. The discussion usually started after people read out loud the story cards or the issue or info cards in the progression of the activity, as observation notes of the discussion of the HIV/AIDS Decide event in Estonia illustrates:

(The issue cards are picked. The discussion and the mood of the group changes. Everybody is suddenly interested.)

-It is confusing...

-How can you always get the good ones...?

-Does it have to be towards my story card opinion or towards my own opinion?
-Wow! "Unwanted side effect is called pregnancy???" (Laughing)
(They make fun over the questions)

Shared Decision or Individual Decision-Making

From the data available, the discussion emerges as the core part of the activity. Generally speaking throughout the discussions that groups engaged in, people usually interacted with each other in a polite way. However, in the final phase of the discussion where groups were asked to create clusters of their key ideas as well as vote on policies related to the ideas, some participants said they found this part more difficult.

In most of the events for which we have data, the voting decisions were quite fast. Sometimes this was simply needed to conclude the event since time had run out, as this post event interview about a Decide event in Newcastle describes:

*"I think we had to rush because we got so into the discussion because it was so interesting...But I think we were able go around the table and vote individually on the different things. We did not try to reach one consensus."
Male, 33 museum exhibits director, UK*

A rapidity of response could also be interpreted as a clear signal that the activity reached its main objective: the discussion really triggered the decision. This comment was given by a participant about a decision-making process particularly well conducted:

*"No, I have to say that during the discussion each one of us tried to take care, besides her/his position, of the one of the others, which became a point of reflection for the whole group. So nobody felt able to maintain her/his position only but in the end when we chose a position we chose something able to connect each one... well... obviously not everyone, but at least the majority of us."
Female, 24, PhD student, Italy*

Most of the time groups were able to come to a decision which was not perceived as totally unacceptable by all the members of the group. Sometimes the decisions emerged as a natural consequence of debate and participants didn't have difficulties in determining some of the common directions of their own group, even if they started with very different opinions. Typically in these cases a general acknowledgement around one policy option emerged and voting was a quite easy process. One participant reports on this kind of process, the "average" decision:

“At the beginning we had really different opinions, but in the end we anyway chose an average. On one side we cut the extreme positions, and on the other we had a little bit more of tolerance and anyway we chose an average.”

Male, 33, business man, Italy

Some other times one or two people took on the function of “opinion leaders” and brought the whole group to their point of view, by convincing them through the arguments from the cards or using their own reasoning on the topic. This form of decision-making process materialised especially in the presence of some kind of expert voice in the group, for example a participant with a professional scientific background, as illustrated in this comment from one of these “opinion leaders”:

“I’m happy about our decision, because it reflected my idea, my attitude, so I was happy about it.”

Male, 50, Informatics engineer, Italy

In both cases, participants would often add comments or rebuttals to specify under which conditions the decision should work. This activity seemed very useful in contextualizing the decision and reflects the attempt made by most of the participants not to offer a universal solution to a problem, but rather a way to handle and come to terms with the problem itself.

The added comments dealt not only with some specific features of the issue at stake, but also with more general contextual and social issues. A group in Trento, for example, added to their policy option the necessity of having a strong permanent scientific education, both in schools and outside it, because they thought that to handle the topic (nanotechnology) it was necessary to have what they defined a “well trained society”.

Real World Dilemmas

Taking part in the Decide activity, people have the opportunity to discuss not only about a scientific topic, but also to get in touch with real *dilemmas* that technoscientific issues typically raise in public arenas and in social contexts, as reflected in the questions that a participant in Trento asks to his group mates in a game on the HIV issue:

“Do you think it would be correct for society to control individuals? How do you take into account the case of someone tricking another person? Shouldn’t these problems be faced on a moral level instead of legislation? Since when is ignorance considered as a crime?”

The raising dilemmas was also useful for people who were directly involved in fields of work that related to Decide topics. For example, a group of HIV health care workers and counsellors in London struggled with ideas of disclosure issues on HIV/AIDS throughout their discussion and then reported out to the whole group of participants the dilemmas they were grappling with.

“Our group had quite wide-ranging opinions ...Having said that, the group actually felt that criminalizing it, actually introducing a specific law may potentially make prevention work much more difficult in that if someone thought that if they are positive, they had to immediately confide or behave a certain way as established by law, it might make -- make prevention work much more difficult.”

Perhaps not surprisingly, participants often expressed a need, especially at the beginning of the activity, for some kind of information on the topics.

“...but we really don't know how things actually work... we don't have enough scientific data... maybe we should have that before discussing ethical implications...”

Participant in Trento, during a game on stem cells

“Personally, I would be afraid to purchase something that was produced with nanotechnology. Maybe it's because I don't know enough about it.”

Concept Map comment, Dresden, Germany, on nanotechnology

Very often groups needed to have a kind of flexible decision, useful in a different range of situations:

“As final decision, I am quite satisfied, first of all because it reflected what I thought... even if it was a discussion... now I can't remember how we put it, but it was an open solution to several, I will not say interpretations, but it left a lot of doors open.”

Male, businessman, Italy

Perhaps the strongest difficulty and the striking ambivalence of the process of “getting to decide”, was represented by the need to cope with both sides of the story of proposing a policy: to guarantee a working legislation and to avoid limiting individual rights. This struggle is exemplified by a short dialogue between participants during an activity on genetic testing in Trento:

- “I think that the main thing is that our policy should safeguard the right of each individual to freedom of choice, we cannot decide for other people...”
- “I don’t agree, I think that people should come to terms with the fact that not everyone may have children”

To overcome these different points of view on the issues, it happened that sometimes a new policy option was created, to suit different participant's points of view. More often than not this new policy was the result of a compromise between other pre-existing positions:

“Well, let's say that we were...we evaluated the different solutions, and then we chose to suggest another one, which was a kind of compromise between two other ones...it seems to me between the second and the third one and it seemed to me that we were from the very beginning for a mid-span solution. So I think that it was satisfying.”

Male, 37, engineer, Italy

“We were able to all agree, anyway in both cases we found a conclusion which was none of the four, so it has been a group decision. We took one of the solutions from the game as starting point and then we added to it. It was one of the mid-span solutions and we added something that was not specified in the options. Above all for what concerns stem cells we did not agree at the very beginning, then we found a common ground by joining together everyone's opinion”

Female, 24, geologist, Italy

Not everything went smoothly, and sometimes the discussion was difficult to carry on, and the decisions difficult to take as well. This happened in particular in the case of participants who didn't interact with the group and spent too much time in reading all the cards and the stories and without sharing their readings with the others, or in the case of participants joining the game when it was already started and didn't really fit completely within the group. In some other cases the interaction among participants didn't work because they pushed too early the discussion toward the decision, without letting every point of view emerge:

“We were not really able to explicate ourselves, we rushed. Reflecting on a specific case from the cards we tried to see the ethical implications and practical consequences for everyday life, and we tried to set a code for behaviour. So we started from a story card.”

Male, 33, scientific researcher, Italy

In some other cases the decision phase was particularly difficult because people were too much involved and passionate about the topic and it became difficult for the facilitator to stop the discussion. Participants wanted to go on and on with discussion. This happened in Trento, Italy where a committee for women's civil rights discussed about genetic testing. At some point the facilitator finally stopped them, but only by saying to them that the Museum was closing.

In Newcastle, UK a plenary discussion occurred lasting over an hour after the game itself ended. Participants shared with each other their experiences in the small groups during the game and issues and perspective about the topics discussed. This discussion might have gone on even longer, but like in Trento, only ended because the museum had to close the building for the night. In the Dana Centre in London after a Decide event on Neuroscience when the centre had to close for the evening participants kept the discussion going in a nearby pub afterwards.

Summary

The observations and participant's comments all point to the effectiveness of Decide as forum that encourages interaction, discussion and examination of your own and other's ideas and issues among small groups of people. The following quotes from participants' comment exemplify this precise outcome of the project:

“The game is good because at the start you have some kind of prejudice – either because you have some conviction of your own or because you never made your own opinion on the subject. Then during the discussion you realize that other people think differently and this makes you see how “relative” your own opinion is.”

Participant in Trento, Italy, game on genetic testing

“I am happy and I feel satisfied, because at the beginning I had an idea and then by discussing it I changed it, and I am happy, because they let it change a bit, and I am happy about it.”

Male, 25, student, Italy

2. Changes and Gains

This section will discuss gains or changes in participant's awareness of the issues and ideas during the discussion and after the Decide event. Specific areas of focus include a greater awareness of the issues, ideas or complexity about the topic. Also looked at were participant's consideration of ideas and issues from the Decide materials and other participant's perspectives.

Primary data came from transcripts of discussions during the event, comments in the post event interviews, and participant's written comments on concept maps pre and post Decide events.

The data discussed in this section is presented in two main categories:

- A. Gains in awareness of the issues
- B. Use of ideas and other's perspectives

Data from the concept maps provided the most indications of awareness gains regarding the issues and will be discussed first. Following this will be a discussion of the use or consideration of ideas and perspectives. This was primarily apparent in the data from post event interviews and Decide event conversation transcripts.

A. Gains in awareness of the issues

Concept Maps

The concept maps data indicated some notable changes in participant's thinking or understanding about the topic primarily in increased questions and increase of ethical terms used post event.

Before the Decide event started, on a sheet of paper that had the topic word such as "xenotransplantation" on it, participants wrote words or phrases they associated with the term. After the Decide event they added additional words or phrases in a different color of ink (see example in appendix). Analysis of the terms and phrases written by participants on the concept maps indicated changes in four ways:

- pre event terms were often more technical terms or science process terms
- post event terms had more ethical issue words or ideas
- more questions were written post event than pre event
- post event questions and terms had increased uncertainty or concern

Pre and Post Decide Event Comments

In the 157 concept maps analyzed there were approximately three times the number of ethical terms written on the concept maps after the Decide event as compared to before. Participants also wrote about twice the number of questions after taking part in the Decide event.

The two topics which had the greatest number of concept maps; nanotechnology and neuroscience/brain enhancement. The increases were not present with the genetic testing, xenotransplantation, and stem cells concept maps which had a small data sample. The reason for this difference is not clear. Perhaps the subject areas have more ethical issues in participants mind prior to the event, or perhaps the number is too small to have had any variation emerge. The pre/post variations can be seen in the chart below.

Topic	Pre event	Post event	No. of Participants
Nanotechnology <i>-Ethical/issue terms</i> <i>-Questions raised</i>	52 15	160 52	110
Neuroscience/brain enhancement <i>-Ethical/issue terms</i> <i>-Questions raised</i>	21 6	96 16	26
Genetic Testing <i>-Ethical/issue terms</i> <i>-Questions raised</i>	30 7	34 15	11
Xenotransplantation <i>-Ethical/issue terms</i> <i>-Questions raised</i>	15 5	11 2	5
Stem Cells <i>-Ethical/issue terms</i> <i>-Questions raised</i>	7 6	6 8	5
Total <i>-Ethical/issue terms</i> <i>-Questions raised</i>	125 39	307 86	157

Ethical/Issue Terms

The pre event words that participants wrote were often science, technical or process terms, as such as “robotic”, “microchip” or “medical diagnostic” on nanotechnology concept maps. Terms such as, “some toxic elements” or “evaluation through public information” are examples of more ethically related words from the concept maps.

It is perhaps not surprising that more ethically related terms were written by participants after taking part in the event in that the event itself is focused on science and social issues of the topic. What is notable is the lack of ethical terms pre event in the nanotechnology and neuroscience/brain enhancement concept maps. This could indicate a lesser degree of awareness about issues on these topics that participants had prior to the event. Here is an example of what one participant wrote on their concept map before and after a neuroscience/brain enhancement Decide event in London.

Pre Event	Post Event
<ul style="list-style-type: none"> - drugs - big pharmacies - ethics - treatment - mental health - increasing capacity - memory - enlargement 	<ul style="list-style-type: none"> - Ritalin - doctors — information - varying degrees of effectiveness & methods - many arguments for each side

Post event comments in all of the topics noted different issues and as such could indicate changes in perspectives or considerations as can be seen in these examples from Decide events in Newcastle and Torino:

Pre Event	Post Event
<ul style="list-style-type: none"> - basic building blocks - could lead to future treatments - several ways to produce them — <ul style="list-style-type: none"> - some controversial (e.g. use of cloned embryos) - some less so (e.g. placental tissue) - seems like a very broad area - current growth area in biology — wild frontier of science? 	<ul style="list-style-type: none"> - no clear way forward — very large pros & cons - 14 days major landmark — embryos can't be individuals before 14 days (e.g. still could become twins) - cord blood stem cells not as useful to research as embryo-sourced cells

Newcastle – Stem Cells

Pre Event	Post Event
<ul style="list-style-type: none"> - embryonic cells - fight disease - grow body organ — enzymes - cell regeneration 	<ul style="list-style-type: none"> - does the financial cost justify the return on potential return - who has the right to chose which direction monies are spent

Newcastle – Stem Cells

Pre Event	Post Event
<ul style="list-style-type: none"> - vegans/vegetarians - medicine or psychology? - ethical issues in medicine - experimentation is possible? - alternatives? 	<ul style="list-style-type: none"> - risks/benefits in desperate situations - reasonable risks - stem cells - ethical boundaries - economical

Torino – Xenotranplantation

Concerns and Questions

An increase in knowledge about issues at times appeared to also increase concerns, often indicating an appreciation of the multifaceted nature of issues with statements like, “more complex than expected”.

The concerns about the issues were often stated as post event questions as can be seen below.

Pre Event	Post Event
<ul style="list-style-type: none"> - drugs - super intelligence - ADHD - psychiatry 	<ul style="list-style-type: none"> - could taking drugs change the course of evolution? - giving rich people even more of an advantage? - who has the power to decide what is normal & who should be treated e.g. criminals? - are doctors overworked & have no time to discuss mental problems effectively? - possible use in criminal investigations – mapping someone’s mind - what is normal? - military use=are they guinea pigs - so many unknown risks & ethical issues - should definitely be controlled

Newcastle - neuroscience/brain enhancement

Some post event comments even indicated negative shifts in participant’s thoughts about the topic. The three below examples from nanotechnology Decide events show neutral or more positive comments pre event than some of the post event concerns.

Pre Event	Post Event
<p>Medicine: other treatments? Cancer treatment, cleaning effect, coatings</p>	<p>Am now more critical of nano technology</p> <ul style="list-style-type: none"> -> Military -> Environment -> Inhalation -> Allergies

Dresden, Germany

Pre Event	Post Event
<ul style="list-style-type: none"> - very small hi-fi - microcomputer - daily use technologies - intangible technologies 	<ul style="list-style-type: none"> - information - very huge problem (more than one could tell)

Trento, Italy

Pre Event	Post Event
<ul style="list-style-type: none"> - remote controlled little robots - micro-ants 	<ul style="list-style-type: none"> - complex field - ignoring everything - who decides about us?

Torino, Italy

Some comments indicated people's gain in awareness about an issue that they did not know was an issue, as this example from the Newcastle Decide event on neuroscience/brain enhancement illustrates.

Pre Event	Post Event
<ul style="list-style-type: none"> - never really thought about it - thought more about physical enhancement in sport - maybe proplus etc. is cheating in exams/life?? - what about 'disabilities' which are subjective?? 	<ul style="list-style-type: none"> - much more interesting issue than I thought - issues about control - what is 'enhancement'? - what do we expect from doctors?

In addition to indicating changes or gains, these responses also point to the fact that these informed discussion events appear to generate questions as much as solutions to the topics being explored. Although used as a tool for evaluation, the questions and statements on the concept maps could offer institutions ideas to follow-up on that address some of the expressed through conducting further programs and discussions on the topics.

B. Use of Ideas and Other's Perspectives

In addition to the concept maps, the analysis of observation notes, audio and video transcripts of the discussions and post Decide event interviews highlighted other gains and changes. These changes were primarily in participants incorporating ideas from the Decide materials and other people regarding the topic being discussed; going from just stating one's own opinion to considering other points of view. The premise is that these broader considerations indicate enhanced thinking on a particular issue.

In the discussion transcripts of the events one could see an increase in references to other's remarks or opinions. Generally the exchanges would first be shorter statements of agreement and disagreement from participants. Then over time, there would be an increase in use of another perspective.

Main indicators included:

- Acknowledgement of others perspectives
- Use of content from Decide materials to make a point in the discussion
- Changing one's mind
- Transfer of ideas to other situations
- Considering complexities of the issue

Acknowledgement of Other Perspectives

"I noticed that it really gave me new ideas. It was great to discuss serious issues with people who were actually interested in the subject and listened to what others had to say."

Helsinki College Student

A number of comments were made regarding participant's appreciation of having other perspectives, people with different backgrounds or experience at the table. Although this simple acknowledgement does not indicate actual consideration of other ideas it could be seen as the potential openness to do so.

Incorporating different ideas from the groups often would start with shorter opinion-like agreement or disagreement statements and then evolve into longer more complex statements that included different ideas mentioned by participants as well as participants

starting to ask each other questions. For example in this excerpt from a transcript of a stem cell Decide discussion one can see in the first part the shorter statements and then longer more complex idea statements later on.

(Af=Adult female, Am=Adult male)

-Af2 reads out policy position 1. "Stem Cell research is only to be carried out on adult ..."

-Af3: "Does anybody agree with that?"

-Af2: I don't agree with that. In other words embryos should never be used

-Af1: "I'm very unhappy about using embryos"

-Af2: I don't think you can rule them out though.

-Af1: No... I think it depends though on how you got your embryos and...

-Af3: I don't like the 14 days. I'm happy with the five...

-Af1: Yeah

-Am6: Why?

-Af3: I don't know, nine days less (group laughs)

-Af1: What have you got by 14 days? It -

-Af3: Well it must be cause if its five somebody obviously thought five was a good idea. They knew more about it than I do.

15 minutes later one can see an increase in the challenges people are considering and raising as they grapple with intended use of stem cells and embryos. Near the end of the excerpt Af2 (adult female 2) dramatically says, "Oh I don't know what I believe!" in response to the issues and ideas being raised.

-Af3: I've always believed that any abortion is killing, I've always believed that. And then the next question is (points to policy sheet) 'Is it justifiable killing?' Probably people say there's no justifiable killing,

-Af1: But sometimes it's the mother or baby

-Af3: Yeah but a lot of the time it isn't (for medical reasons), I do have a problem with people coming to me and saying, 'I'm pregnant again, can I have another abortion?'

-Af2: "But what I don't understand is if you've got a little ball of cells which is not going to develop into anything else, its not alive yet it has the potential. It's not going to develop into anything else.

-Af3: It is alive, it depends on how you use it....

-Af2: Yes, but I'm sure there's lots of things which might be able to live if you could do something to it.

-Af1: But if you've created it with the view of not giving it the right conditions, you produced it for experimenting on it

-Af2: Yeah but it's not going to live anyway I don't see why it's life

-Af3: There's lots of women who'd like an embryo implanted in them isn't there?

-Yeah (several voices)

-Af2: If you give those embryos to someone else, but then that causes a whole load of problems... giving birth to someone else's baby and all
-Am4: Yeah true (turns to Af5 who nods)
-Af2: That's a whole 'nother ball game
(Silent pause in group)
-Af2: Oh I don't know what I believe!
-Af1: The thing is in invitro you very often are using someone else's embryo
-Af2: I don't necessarily agree with the whole process, but then I haven't started having kids yet so...might be a time I start using IVF and change my mind.

Use of Content from Decide

Similarly the integration of ideas from the Decide materials also increased over time in the discussion. Participants often commented on how over the course of the event they became further involved with the ideas from the materials as described by a participant after a Decide event on HIV in Trento, Italy :

“At the beginning I was very sceptical, and related my cards quickly: but as we proceeded I became more involved and it made me go back and ponder with more attention the cards I and the others had chosen.”

“More than learning from the technical point of view I started to consider different points of view, for example before I totally agreed to the pre-implantation genetic diagnosis -- but then I never faced the problem of a second child who is born only to cure the first. So, to understand a different perspective from my own, a 24 year old girl that never had such problems, this was really useful to me; through the game different perspectives were offered to me. ”

Female, 24, PhD student, Italy

Changing one's Mind

A further indication that people were going beyond their own opinion and were considering other perspectives from the materials of the Decide activity or other people's perspectives in respect to their own thinking is was when they changed their mind on an issue. As the below transcript excerpt from a London Stem Cell Decide event illustrates during the discussion these changes were not often comfortable.

- I actually am quite worried about changing my mind about the whole embryonic thing. (some laughter in group)

- I mean it's true if you can't draw the line some where, people can manipulate it, you might as well say.

These changes were almost always observed to occur near the end of the discussion or were mentioned in post event interviews.

Transfer of Ideas to Other Situations

Participant's stories were common occurrences in the discussions and were considered noteworthy in that they offered indicators of participant's understanding through applying ideas from the materials and discussion to other situations. In this example from Estonia's Decide event on nanotechnology near the end of the discussion in response to a provocative idea raised by one of the group a story of an actual event was described:

-Right, we should make human tests instead! – Lets get something in Tartu's water and see what happens!
-By the way - the Soviet Union did this with Estonians once. They had a medicine - everyone had it in one day. Happily it all turned up well. Of course we did not know this...
-It cannot go worse than this?
-It should not be this way...

In this additional example from a post event interview a participant applies his new understanding to his field of work. He had stated in a pre interview that his motivation from coming to the event was to learn more about xenotransplantation.

“You know what I think this has done for me is? An issue we work on a lot (in his job) is stem cells and for me that's a much bigger, a much more ethically contentious issue. But it made me realize in myself that I don't see a problem using animals for transplant. Whereas taking another human life, for a human life, for example embryonic stem cells. I actually see xenotransplantation as much more acceptable than stem cells.
Male, UK Medical Technician

Considering Complexities

As demonstrated in the concept maps discussed earlier, growing awareness of the complexity of issues could also be observed in many of the discussions during the Decide events. A key indicator of this was when discussions would go from more simple right or wrong judgments into struggles with various dilemmas of the topics as mentioned in Section 1.

For example in Estonia and London Decide events on HIV/AIDS these excerpts show participant's going from simple statements that education is needed and people must get tested for HIV to then grappling with the potential of the repercussions on their lives if they learn that they are positive.

Estonia

-It is the matter of education...
-But would you let yourself be tested for virus if you would know that in the end your name gets to red list and you will never be able to have sex again??

London

(Beginning of discussion just after story cards have been read)

Am2 – First of all is to understand the difference between reckless and intentional transmission.

(Am1& Af3 start to explain the difference)

Am1 – It's reckless when one partner is aware and they have unprotected sex...

Af2 – No I don't think so...reckless is when you're aware but don't take steps to...

(A few minutes later...)

Af3 – Yes and there's the question of getting tested

Af2 – Which you won't if you'll get prosecuted.

Ten minutes later the discussion can be seen to now take into consideration a greater awareness of the dual nature regarding prosecution and disclosure. This excerpt also illustrates the way in which the group is building on each other's points:

Af1- But the threat of it might be sufficient to make some positive people be honest?

Af2-But the threat can go the other way

Af1 – Yeah

Af2- Make people don't have sex with this person

Am3-Or they might feel if I don't know I'm positive why should I go for the test

Af1-Yes I think that's what will happen. And a lot more will not get tested.

Am3-Cause if I'm tested and I'm positive, then I have a duty or whatever to tell you

Summary

Although most all of the gains discussed in this section related for the most part to greater awareness of ideas and issues, it is important to note that not all of the gains mentioned by participants were about the issues or ideas. Some gains mentioned were more about

interest or their process of decision making and judgement. In a post event interview six months after the event a UK nurse also recalled personal gains she got about her own judgement :

“You tend to take on information without ever really thinking why you made that decision. Sometimes you judge things without ever really thinking about why - maybe that is just me personally. So I learned that about myself”

Unexpected interest, or ways of using what was learned was an additional element some noted as illustrated in this post event interview excerpt in response to the question, “*What do you remember the most about your Decide session?*”

“The thing I remember most is that I thought that xenotransplantation would have interested me a lot less, and instead the game involved me.”

Male, 54, scientific popularizer, Italy

“I enjoyed especially the Decide game. It was really a fun experience; who would have thought that I had an opinion on nanotechnology.”

Helsinki College Student

“The things that came through for me, I think it was quite useful because like later on when I’m reading about it in the media , to have sort of gone through issues that you’ve actually thought about positions. Because there are lot of things you sort of half think and you rarely sort of examine them or put them out for anyone to debate them or challenge them.

Female, 20 UK, medical student

“When I came home after the game, I went on Google and searched something about the topic”

Male, engineer, 32, Italy

3. Structural Features of Decide

This section will present observations of the use of the different components of the Decide activity focusing on ways in which these different features contributed, or did not contribute to the group discussions. The first part will address the materials of Decide such as the cards, the second part will look at the less material aspects such as venue and group composition. The section will conclude with an overview of some of the suggestions by participants regarding the activity.

A. Materials of Decide

Opening Instructions

The instructions for the activity are illustrated and briefly described in a short text on the paper placemats in front of all participants. On the placemat there is introductory material about the topic, the policy positions and a step-by-step overview of the structure of the activity through words and pictures.

The placemat is intended to serve as a facilitation tool, making it unnecessary to have an external person leading the event. However this evaluation did not observe any “facilitator –free” Decide events. Each of the Decide events we observed had designated project staff to introduce and facilitate the event. Yet, the level of guidance varied quite a bit, from a brief introduction of one or two minutes on the goals and structure of the event, to a 15 minute overview with brief talks by experts on the topic.

Though, no matter what amount of initial orientation and instruction was given, there was some initial confusion by groups before they got into the story cards, as this transcript excerpt from a London Decide event on genetic testing in illustrates at the beginning of the card distribution:

-Af2: Do we pick one?

-Am2: I think we just circulate them.

-Am1: Pass them...dunno

(Cards are passed around. Silence while cards are read.)

-Af2: We're supposed to pick one

-Am2: Oh are we? Perhaps we should just read them out as we go around the table.

-Af2: I don't know if we should pick one randomly...

-Am1: Let's go round...(to Am3) Yep, do you want to read out that one?

-Am3: (reads out story card)

-Af2: (nods) I have one called the Snapes...

Also in post event interviews a frequent comment from participants was on the confusion they felt in the initial start up of the Decide activity. Some participants said they were worried that they might be doing it “wrong”, or felt that they didn’t really get what they were supposed to be doing, saying that there were so many steps to keep track of.

There was a definite progression designed for people to follow. However, developers of Decide intended it to be a flexible structure that would allow for participants to generate their own variations in how they conducted the discussions with the intention that there was no “wrong” way to do it.

To help alleviate the feeling of not doing it the right way, perhaps the flexibility of use could be made more apparent in the overview on the web or placemat as well as any introductions made by facilitators who introduce the activity.

One element of the activity that was described on the mats that groups never appeared to pay attention to were the distinct stages between information gathering in which the different cards are distributed and selected, and the discussion phase where the group discusses their selections. Although discussions were observed to deepen in complexity of arguments and points made over the course of the event, it was rare to not see some minimal discussion begin during the initial selection of the story cards.

Yellow Cards

The first card to be dealt out to participants was the “Yellow Card”. The function of this card was to help facilitate participation by the whole group in the discussion. If someone was seen as dominating the discussion too much or interrupting other people, group members could give the person a Yellow Card as a signal to let others speak or contribute. Although participants sometimes commented that they liked the idea of these cards, there were no observed uses of them during the evaluation in the UK. In Italy the yellow cards were observed being used in the context of a joke or in a light-hearted way and not with the real intent of stopping the other participant. Notes from a Decide facilitator in Estonia offers a similar observation:

“There were times when micro-biologists together with biologists started arguing and at the same table there was ceramicist who could not follow the discussion at all. At the same time she was too polite to give them the yellow card.”

Story Cards

“Cards surely enhance discussion, because a device which surely works is that of having a reference story to add the other cards.”

Male, 54, scientific communicator, Italy

The story cards were then passed out for participants to read through and select one that they felt important to the topic. The stories present a topic from the point of view of a person who is in some way impacted by it. These primarily fictitious accounts were intended to start the discussion activity on a more personal note. From the observations and reports from facilitators, we can confirm that the story cards were a useful tool in initiating discussion. In almost every observation people started to give comments and to exchange opinions just after reading the story cards. Reflecting on the story cards in post event interviews these two participants commented on the value of looking at the issue from different angles, never thought of before:

“Well, let's say that the most interesting part has been without any doubt the discussion. The story cards started it, and the game gave us the opportunity to play a very different role from our usual one, and therefore to see the problem from a different angle.”

Female, 24, PhD student, Italy

Question: “Did you learn something?”

“From the scientific point of view, the content, no, because I graduated in biotechnology, so it's a bit difficult to learn something new. But it was very interesting to me to read the story cards, there were some cases and facts that I didn't know before and which made me think and reflect.

Female, 24, researcher, Italy

In some groups people were observed taking on the role of the person from the story card throughout the discussion and even argued different points from what they perceived would be the point of view of the person in the story card, even if it was a perspective they did not agree with.

The personal stories in the cards would often trigger personal stories from participants. An extremely powerful example of this personification and exchange of perspectives through stories comes from a observations notes from the facilitator of an HIV/AIDS Decide event in Vienna that was held at a homeless shelter. Participants consisted of homeless people and shelter staff members.

“The story cards were probably the most important. These people related to them very directly - not in a hypothetical sense, but by what they had experienced themselves. For example, a man had contracted Hepatitis C from sharing a needle with an infected person, fearing also for HIV transmission. A woman sleeps with her HIV+ partner unprotected "because she loves him and he does not like condoms", knowingly risking transmission. Another man talked about this one-night stand with a woman who his friends later said was positive - and how he feared until he had the results of the test. And many more... They were extremely open in how they talked about their sexuality, alcohol and drug abuse and how this affects them in their choices. The staff members also participated openly, asking questions, concerned by the risks that people were taking, but not urging them how to behave differently. It was obvious through the cards anyway.”

The stories often had a presence throughout the discussion, and the clustering activity for the final concepts often derived directly from this first and spontaneous interpretation of the story by a participant.

Information and Issue Cards

“I think that when someone is encouraged to discuss and finds her/himself with some cards which provide information is more incited to do it.”

Martha, 24, researcher, Italy

Following the story cards, the next step of the activity was the dealing out and selecting two information and then two issue cards. As their name implies, these cards provided information and specific issues on the topics. In the observations they appeared to trigger further discussion that was started by the story cards. As mentioned above the discussions in almost all cases began as the cards were read and selected. The timing of when cards would get distributed varied considerably amongst the groups observed. For instance in one of the neuroscience/brain enhancement discussion groups in London the information and issue cards did not get distributed for over 30 minutes into the activity as the group engaged in a discussion that was launched during the story cards. In other observations, groups would sometimes distribute both sets of cards at the same time, in others they would first deal and select the information cards, then the issue cards as suggested on the place-mat instructions. This difference of distribution did not appear to alter the amount of discussion.

Participants frequently commented that the cards offered a way to examine a position without feeling as though they had to make a personal commitment right away. Having

this offered a comfort zone for some participants. As a participant in a Newcastle UK Decide event said in a post event interview:

“We didn’t sit and read the cards to each, instead tried to summarize what was chosen and why, not read exact. Not sure if we were supposed to but it felt right to do... Maybe it was the personalities, but every one seemed comfortable joining. You could actually build it up cause you were taking a position based on the cards and not feel quite as exposed”

Integration of the Materials in the Discussions

As the activity progressed there often was an increase in participant’s referral to the different Decide cards to support a point they were making. The information and issues would frequently be used in conjunction with a participant’s own experiences or opinions in the discussions. For example in a transcript from a HIV/AIDS Decide event in London one can see how the discussion weaves together Decide information and opinions:

-Am2 -(refers to card that Am3 handed him) “Yeah that’s the argument this card is making” (starts to read the card) “If the person knows and agrees to participate freely...then there’s no justification for criminal charges”
-Af2- I think that’s fair
-Af1- Hang on let’s read that again (takes card and reads it silently)
-Am1- You decide, that’s your problem. But what about this? (Holds up another card)

Clustering

At the end of the discussion phase to provide a prelude to the policy decisions and to sum up the discussions, participants were asked to cluster all of the cards around what group members felt were the key ideas of the discussion. Consensus of key ideas was not always arrived at on all of the key ideas. Some groups generated several key ideas that represented different key ideas of different people in the group.

The clustering of ideas was rarely observed to be directly linked the policy voting. Rather, participants clustered around what they called the two or three “main themes” of their discussion but without making explicit reference to a policy option linked to the different clusters.

In these cases the voting procedure seemed to be in some way a separate moment from the discussion and it assumed a quantitative profile: the group came to a decision by counting the votes and then through a following discussion about the voting phase and how to deal with possible controversial opinions.

In the less common cases, where the clustering activity more directly related to the policy options, participants tended to be more consensual around a decision which was a direct consequence of the clustering activity, be it one of the four policies provided or a fifth original one, and in this case there was a general agreement on one single policy option and the decision was taken and the voting moment was considered as a separate moment. In any case the clustering activity seemed to be helpful as a “translation” device from the “language” of discussion to that of decision.

Policy Voting

As described in section 1, a critical step of the discussion was to translate the discussion into a practical policy option. A lot of comments about the activity were concerned with the difficulty of translating the sometimes complex and varied outcomes of the discussion into a shared decision.

The most common method observed in the voting process to pass the policy voting sheet around and have each person mark individually their votes on each policy. People would put a mark along a vertical bar indicating the level of agreement or disagreement with the topics.

A less frequent and more consensual way that voting was observed was by having the whole group make one combined vote in each policy.

Fifth Policies

When there was no consensus around a single policy option, the fifth policy option provided a solution for some groups. Fifth policies are ones that groups of people generated at the end of the Decide event discussions as they were voting on the four policies that are part of the activity. This option was designed into the activity to offer people a way to express ideas that were not addressed by the existing policies. The ideas offer insight into the issues that were important to the group. And, further, these policies could be a resource for policymakers and social science researchers wanting to understand different perspectives on science and society issues.

The four policies in the Decide nanotechnology activity that participants vote on are listed first in the box below.

Decide Policies

1. Rapid nanotechnology expansion, minimum regulation. Promote rapid expansion of nanotechnologies, with minimum of regulation, to ensure benefits are realized as quickly as possible.
2. Proceed with nanoscience but regulate. Allow scientific research in nanotechnology to proceed, setting new regulations alongside the potential developments which emerge.
3. Regulated nanoscience with public dialogue. As 2. But opening public dialogue now on the directions of research and applications.
4. No nanoscience unless specifically publicly agreed. Allow only the research and applications whose specific goals have been through an ongoing, widespread national public debate and dialogue

With the fifth policies one can begin to see the range of responses from simple to more complex. As these two examples from South Africa illustrate:

- Stop all development in nanotechnology
- Explore the economic opportunities that nanotechnology offers for developing countries and SME with support structures.

Here are examples of policies developed by Decide event participants in seven different countries on nanotechnology. It is interesting to note that many emphasize some aspect regarding the need for control and regulation even though regulation was mentioned in most of the four policies.

Germany

- Nanotechnology should be banned for military uses and as a system of monitoring and control, that hurts the human rights.
- More information for the public about the possibilities of nanotechnology.
- Regulation – Control – Safety – Conducted Safety Research
- Nanotechnology economics should work transparently and accept responsibility.
Transparent information: We want to be able to understand nanotechnology

France

- Research should serve the citizens more than the economics stakes.

Belgium

- As policy three but: do not let public dialogue slow down nanotechnology research
- Agreement with position two if extended with the fact that the regulation should be passed on to the public.

Estonia

- Nanotechnology should be popularized

Poland

- Every part of nanotechnology that directly affects human beings should be controlled by an appropriate institution.

United Kingdom

- We should subdivide nanotechnology into more relevant sectors and have different policies for each. We should err on the side of caution with respect to risk, i.e. grey goo going to kill mankind.
- Regulation should be considered individual issues/fields rather than under the umbrella term “nanotechnology”

B. Other Features of Decide

Time

Facilitators for the Decide events almost unanimously stated the need of at least one and a half hours for the Decide activity. Observations often noted that the discussions in this activity can't be rushed. It takes a while for people to get into the ideas and exchanges in all settings observed as reflected by this comment from Estonia on a Decide HIV/AIDS event:

“In the beginning everybody was just playing, as it was told-impersonally. At the end everyone felt involved and people were discussing about the subject and how it impacts their lives after the end (of the activity) as well.”

In the few cases where there was less time, the discussions appeared rushed and people commented that more time was needed for the ideas to develop and that they felt

“pushed”. Even with an hour and a half, participants at times commented that they wanted more time, especially for the discussion phase.

“Well, I wasn't really happy about it because in my opinion there was too little time to discuss. After reading all the cards, the story cards, the fact cards, well... after we let everybody express their opinion in turn, and when everybody had spoken, there was no additional moment of discussion, everyone goes back home with their opinion, because there was little room for confronting each other.”

Female, 24, PhD student, Italy

“Well, I didn't like that facilitators had to be so strict with timing. But to be able to confront each other, above all in the final phase, after collecting every element, it has been really useful, but I'd like to have more time for discussion, because in the end, that's the goal of the game.”

Female, 24, geologist, Italy

“The discussion part is too short, at least in the test we had, you get to discussion after the preliminary step and then it's immediately over.”

Male, 33, scientific researcher, Italy

The role of the facilitator helped with respect to the time constraints. The facilitator having an overview of the time it takes for the various component of the activity could intervene as needed and encourage people to go to a next step as quite frequently participants tended to take a longer time in discussions and then not have enough time for the clustering and voting part of the activity.

Context of the Events

Although most of the observed Decide events occurred in museums or informal science centres, schools were mentioned by some participants to be a particularly apt environment for Decide:

“I would recommend it from the educational point of view, at school... I think I'm going to use it next year, because it's a breakthrough method!”

Female, 45, science teacher, Italy

In this evaluation we have observed Decide events in very different settings, from science museums to libraries cafeterias, from schools to public meetings and fairs. Decide appears

to fit best in any social and public situation, where it is easy for people to be able to sit in discussion groups and take the needed time for the entire event. In general people seem to appreciate this public and open dimension, but it happened, sometimes, that the noise disturbing and that someone wasn't able to concentrate during a Decide event that was held in a public department store:

“I would like a more familiar atmosphere, without noise around. The tables were too close each other. I would suggest less confusion and more opportunity to get concentrated and to interact with the others.”

Male, 54, scientific communicator, Italy

Composition of the groups

Some people suggested to have an easier version, to let very young kids at elementary school play:

“Quite well; with this structure for secondary school students. You should make it easier for younger kids. In some cases something should be done for people with lower education, simplifying some terminology, some cards; but you should do a little easier version because there's an understanding gap.”

Male, 33, scientific researcher, Italy

Other people wondered about the effectiveness of Decide for a broad public. Some sceptical comments were made about its appeal to a general notion of “wider public”

“The public who takes part to this kind of event is anyway a very small one. Now I don't know how it is with schools, but people who participate on voluntary basis, if they do it, it's because they're already a certain kind of group. Still it remains quite a technical thing. Well maybe technical is not the right word, anyway someone who's already interested plays the game.”

Male, 33, scientific researcher, Italy

Summary

Decide was designed to be used by a broad age range from teens on up and differing level of experience or familiarity with the specific topics. Ages of participants documented in this evaluation ranged from 14 to people in their 70's.

It was frequent to observe groups that had a mix of participants in a discussion group with differing levels of familiarity on a particular topic. It was common to get comments from participants after the event that before the event they were concerned that they wouldn't

know is much as the others and might not be able participate in the discussions, and were pleased to find that their opinions and points of view could contribute to the discussion.

During the development of Decide in one of the report-out meetings of trials by the partner museums a discussion ensued on yellow card use. The partner from Helsinki, Finland said that the people doing the activity liked the idea of the yellow cards, but didn't use them in the discussion. The Naples, Italy partner in contrast said, "Really? At my place they were almost throwing yellow cards at each other in heated discussions!" Although they were very different styles of dialogue, the Helsinki and Naples partners both said that the participants were satisfied with the discussions and came to consensus in their policy voting.

This difference highlights a couple of important features of Decide. First is that the activity itself is flexible enough to allow for different forms to exchange. Second is that even in heated arguments and debates consensus can happen (perhaps if the debaters are accustomed to this form of discourse).

4. Sustainability and Impact

Decide Impact Beyond the Initial Project

There are several strong indicators regarding the lasting use the Decide project that go far beyond the initial 13 partner museums of this project. A key factor in the long lasting impact is the fact that the Decide activities are all freely available, in 12 different languages and easy access on the website: www.playdecide.org

But equally significant is that these materials appear to be meeting a need from widely diverse communities who want to hold informed discussions and debates on science and society issues.

Although it is impossible to document how many new museums, groups or other institutions have downloaded the materials and conducted Decide events, some minimal observation of new places that have held these events can be seen as countries are added to the country-by-country policy voting totals on the website. From this one can see that there are a considerable number of new places that have held events. Here are some of the events that have been conducted beyond the Decide projects:

- Norway has translated materials to be used by Norwegian science education institutions
- South Africa, 60 science communication professionals including university research sectors, hospitals staff involved in medical ethics held a Decide event. Subsequently Decide was presented at the Southern African Science Center Association in November 2006.
- Canada, Toronto Science Center held Decide events for their staff and members as they consider this for their public. Decide will be presented at the Canadian Science Center conference in June 2007.
- United States:
 - Miami Museum of Science two events for staff and board
 - "Fostering Dialogue about Science Policy " On-Line Workshop. A two-week workshop moderated by Decide project director, Andrea Bandelli, organized by ASTC (Association of Science and Technology Centers). 15 US institutions took part, workshop included:

- a week of on-line conversations on the topic of Nanotechnology
 - organization of a Decide event (on Nanotechnology), at each institution
 - in follow-up discussion on the experience of the event, most participants said that they intend to now hold Decide forums in their institutions, with visitors and staff.
- Nanoscale Informal Science Education Network (NISE Network), a \$20 million US/National Science Foundation project to raise public engagement with Nanotechnology in the USA is using Decide as a format for their public forums.
- Nanodialogue project in 8 large EU science centers used Decide as part of an exhibition and program around nanotechnology
 - Dotik a new museum floor staff/explainer training workshop on facilitation of science and society issues in science centers and museums held Decide training workshops in Trieste, Italy August 2006.

After this evaluation was concluded, there have been more than 330 debates from July 2006 to March 2007, and the number is growing steadily.

Going forward, the long term use and impact of Decide will depend in large part on the ability for ECSITE or some other international education institution to keep the web-site up-to-date with newer translations of the materials as well as uploading voting and any other modifications to the topics to keep them up-to-date.

On a more personal note, the long lasting nature of the Decide activity on the participants themselves were seen their reflections of their experiences long after their participation in a Decide event. This comment exemplifies some of the persistent memories of the social and content impact. It is from a telephone interview conducted six-months after a UK Decide event:

“If you’ve got a really busy life you just skim the surface of things this lets you go deeper. A lot is kept from us often. Any topic that is at the front of science – just to give some idea. I thought going in that I just won’t understand what is going on (not being familiar with genetics) but I was wrong. Others might feel the same way, but you

just need a friend that s familiar with it to bring you along (to the event)... It was pitched at a level I could understand. Sometimes people might feel they won't understand anything if they hear the word 'genetics'. But it is more on the ethical dilemmas and everyone has opinions on that."

Conclusions

”Decide will directly engage a very diverse audience of adult and young citizens in several countries via the European network of science museums and other institutions in deliberative informed debate on topics of local and national interest.”

Decide Proposal to the European Commission, page 3

One of the most significant and noteworthy accomplishments of the Decide project is its role in bringing people from highly different background and ages to the table and then providing a structure and materials that engage these diverse communities in informed discussions on real world issues. This concluding section of the evaluation report will highlight a few aspects of the success of this project regarding this achievement.

Inclusion of different perspectives

In the 12 different countries that held the six different Decide events, discussion groups did engage people from similar as well as widely different backgrounds and ages to have informed and in-depth discussions on a real world issues. Participants and event facilitators commented on the value of having diverse viewpoints at the table to explore a real issue in-depth. A facilitator in Estonia said that they had deliberately invited people from different backgrounds to take part in the Decide event:

“The players were deliberately picked with totally different background – we had a dentist, physicians, biologists, theologian, public administrator and etc. People were different from personal lifestyle as well – we had married people and lesbian. This made the game more interesting as they represented totally different views.”

Estonia observation notes, HIV/AIDS

Even six months after the event in a post event interview, the value of diversity in the discussion group was mentioned by a medical technician from Newcastle:

“I thought I know about the topic but not much knowing in depth, I thought it was going to be difficult from that perspective, I was at a table with knowledgeable people. it was thought provoking and made me examine how I feel about Genetic Engineering, probably. Although I believe science should move ahead ultimately, I grasped the ethical side of it. It brought up so many issues like taking embryonic cells....The girl I went with just finished her degree on genetics. There was an engineer at the table – I remember him more than anyone else. It was unusual to have someone with that background there. There were a couple of young girls. It was interesting.”

Effective for widely different communities

Integral to this inclusion of diverse points of view is that the Decide events were effective in widely different settings, communities and countries.

One of the most powerful examples regarding relevance of the Decide activity for a broad range of people is with the use of the HIV/AIDS Decide activity in London and Vienna. In London the event at the Dana Centre was attended by many HIV counsellors and health care workers who work with many of the issues addressed in the activity. In Vienna the Decide event was held in a homeless shelter and participants were homeless people and center staff who had a familiarity through personal experience (the entire report on this Decide event in Vienna can be found in the appendix III of this evaluation). What is striking is that the level of participation and expressed values of the Decide event by facilitator and participants afterwards was indistinguishable, and high in both settings.

The Quality of Decide Activity

And finally, it is not by chance that Decide succeeds with so many different audiences. The development of the high quality, effective materials of Decide reflects the process and time devoted to prototyping of the materials.

Time, a necessary ingredient for having effective discussions as mentioned in this report, was also a key factor in the development of effective Decide materials. Enough time was designed into the development process to try out and modify based on the observed needs.

An evaluator of this project was able to observe some of the development sessions of Decide to watch the evolution of the format and content. It was adapted over a year period of time from an existing activity called, DEMOCS of the New Economic Foundation. DEMOCS had been created for use in public settings in the UK such as Pubs. The adaptation process, lead by the project director, Andrea Bandelli, was carried out by four partner science museums and centers. Each center trialled new versions and new topics at their centers and then met together to report results and make the necessary revisions.

It was through this back and forth process that all of the features of the activity – the placemats, content of the cards, voting process as well as the web-site itself was

developed. Essentially it was a deliberatively democratic process, reflecting the deliberatively democratic process aim of Decide itself.

Appendix

General Information on Decide

Topics:

- Nanotechnology
- Stem Cell Research
- Neuroscience and Brain Enhancement Drugs
- Genetic Testing
- Xenotransplantation
- HIV/AIDS

Partner Institutions part of Decide project:

Austria - Vienna - Science Center Netzwerk

Belgium - Mons - PASS

Estonia - Tartu - AHHA Science Centre

France - Grenoble - CCSTI

Germany - Dresden - Deutsche Hygiene-Museum

Italy - Torino - Extramuseum

Italy - Trento - Museo Tridentino di Scienze Naturali

Netherlands - Kerkrade - Industrion

Poland - Warsaw - Kopernik Science Center

Slovenia - Lubljana - Tehniski Muzej Slovenije

Spain - Valencia - CAC

UK - London - Dana Centre

UK - Newcastle - Centre for Life

- Between 1200-1500 people participated in Decide events January – May 2006
- Materials have been translated into 12 languages by Decide partner institutions
- On the website, *www.playdecide.org* all materials for each topic are downloadable and free of charge

Data Collected for the Evaluation Study

Concept Maps

London, Dana Centre – Nanotechnology, 28 February 2006
London, Dana Centre– Neuroscience/Brain Enhancement, 25 April, 2006
Newcastle, Life Centre– Genetic Testing, 14 March, 2006
Newcastle, Life Centre - Stem Cells, 14 March, 2006
Newcastle, Life Centre-Neuroscience/Brain Enhancement, 14 March, 2006
Torino - Xenotransplantation & Genetic Testing, 7April, 2/06
Trento –Nanotechnology, 9 May, 2006
Dresden, Hygiene Museum-Nanotechnology, 26 April,2 May 24 May & 13 June 2006

Video Documentation

Dana Centre – Xenotransplantation, 31 January, 2006
Dana Centre – Nanotechnology, 28 February 2006
Dana Centre – Neuroscience/Brain Enhancement, 25 April, 2006
Dana Centre – HIV June 2006
Newcastle – Genetic Testing, Stem Cells, Brain Enhancement, 14 March
Torino (multiple topics)– 7/4/06
Trento – Nanotechnologies, Audio recording, 6 May 2007
Torino –(multiple topics) Audio recording, 7 April 2007

Evaluator Observation Notes

Dana Centre – Xenotransplantation, 31 January, 2006
Dana Centre – Nanotechnology, 28 February 2006
Dana Centre – Neuroscience/Brain Enhancement, 25 April, 2006-Sarah Davies
Newcastle – Genetic Testing, 14 March

Torino – evaluator notes, 7 April 2007

Trento – facilitator notes, 6 May 2007

Reports from facilitators

Dresden/Hygiene Museum – Stem Cells, 21 February 2006
Dresden/City of Science – Nanotechnology, 9 May 2006
Estonia/At-Tartu – HIV, 19 January 2006

Estonia/At-Tartu – Xenotransplantation, 28 February 2006

Estonia/At-Tartu – Neuroscience, 23 March, 2006

Estonia/At-Tartu – Nanotechnology, 9 May 2006

Helsinki/Heureka – Nanotechnology, 2 October, 2006

Vienna/ VinziRast Homeless Shelter – HIV, 14 June, 2006

Pre & post event interviews

Dana Centre – Xenotransplantation, 31 January, 2006

Dana Centre – Nanotechnology, 28 February 2006

Follow-up Interviews

Newcastle – 4 interviews, 6 months after event

Trento – 6 interviews, 2 months after event

Torino – 6 interviews, 3 months after event

Example of a concept map

Name Jo
Age _____

Could taking drugs change the course of evolution?

psychiatry

drugs.

giving rich people even more of an advantage?

who has the power to decide what is normal & who should be treated eg criminals?

BRAIN ENHANCEMENT

should definitely be controlled.

military use = are they guinea pigs.

are doctors overworked & have no time to discuss mental problems effectively?

ADHD

super intelligence

what is normal?

so many unknown risks & ethical issues

possible use in criminal investigations - mapping someone's mind.

Example of a facilitator report

19, June 2006

Report on HIV/AIDS Decide Event in Vienna

Barbara.Streicher

Director, Science Netzwerk, Vienna Austria

The Decide event on HIV/AIDS in the homeless shelter was a great success!

Usually this shelter called "VinziRast" is just open over night, but on Wednesday afternoons they sometimes provide an activity for their guests. For the Decide event, the woman who runs the shelter invited several of her guests who she thought could have an interest in the topic or in a discussion. We had 7 homeless people (1 left earlier, 1 came late) and 4 members of the staff who played together at 1 table. Apart from myself as a facilitator, I had invited one of our partners from AIDS Help Vienna who already had been a host for the game in his institution. He did an excellent job in answering specific questions that came up, but very quietly waited whether and until he was asked.

I started by introducing the yellow cards and they just loved them and used them frequently during the game, with a lot of humour e.g. whenever two people talked at the same time.

Next I shortly introduced the topic - a simplified version of the introductory text and then handed out three papers saying "Transmission of HIV. Offence? Responsibility?" to write on. They wrote mainly whole sentences, definitely seeing it as a criminal offence. Fear and information were also listed. When I asked them again to write in the end, there were no additions apart from a woman who had come late.

As some of them are not so good at reading, we very seldom swapped the cards, but dealt them out and people read them (sometimes in pairs to assist each other). Then they read them loud and discussion started. (I had excluded some of the cards with very complicated texts).

The story cards were probably the most important. These people related to them very directly - not in a hypothetical sense, but by what they had experienced themselves. For example, a man had contracted Hepatitis C from sharing a needle with an infected person, fearing also for HIV transmission. A woman sleeps with her HIV+ partner unprotected "because she loves him and he does not like condoms", knowingly risking transmission. Another man talked about this one-night stand with a woman who his friends later said was positive - and how he feared until he had the results of the test. And many more... They were extremely open in how they talked about their sexuality, alcohol and drug abuse and how this affects them in their choices. The staff members also participated openly, asking questions, concerned by the risks that people were taking, but not urging them how to behave differently. It was obvious through the cards anyway.

Generally the homeless people had quite a good knowledge on some issues, others - or rather implications - were new. Several statements like "this is totally new for me, very interesting", "this is important" showed that they really appreciated the discussion.

A number of very practical questions that are not answered through the cards were asked such as how a baby born from HIV+-parents can be protected - and why, how HIV+ children are treated in kindergarten, where did HIV come from, when did it become an issue, how did they learn about it, the law in Austria, where can people turn to, etc.

Building clusters was a difficult task (it involves quick reading again), so I helped them and we just named them with headers: law, stigma, prevention, medication, poverty, pregnancy.

The topics that came up were similar to that of our first HIV/AIDS discussion, the wording sometimes different. An interesting first observation from a person from AIDS HELP was that they frequently talked about a person risking transmission as "inconsiderate" - in contrast to the discussion he had hosted before where people mainly talked about being "irresponsible". He said this might be significant. (I will receive some more observations and comparisons from him later.)

Generally, they shared an understanding that a person that knows s/he is HIV+ should be legally responsible for telling their sexual partners. The vote in the end showed no clear picture, as the distinction between option 1 and 3 seemed not so clear.

The discussion lasted for about 2 hours, it was very disciplined, sometimes fun, sometimes very serious. They liked the idea that the results will go to an international website and thus be respected. Everybody seemed to have learned and enjoyed the discussion a lot (including myself and AIDS HELP person).

I was really impressed by the event and again grateful for this tool that really seems to work in various settings. I am always astonished about how it generates a respectful atmosphere and how efficient the simple rules are. It was a very good experience!!

The authors:

Sally Duensing, PhD

Visiting Professor,
Department of Education and Professional Studies
King's College London
email: sally.duensing@kcl.ac.uk

Sally Duensing is currently a visiting professor at King's College London working with graduate students and post doctorate researchers in the Center for Informal Learning and Schools (CILS). She is also an independent consultant working on research in areas of science and society programs as well as relationships of cultural context and the design of informal science learning environments. In 2000 she held the Collier Chair, a one-year invited professorship in the Public Understanding of Science at the University of Bristol, UK. Prior to this, for over 20 years, she was at the Exploratorium in San Francisco where she developed connections between the Exploratorium and the museum and scientific communities and directed a variety of exhibition projects primarily in fields of perception and cognitive science including a large exhibition on biological, cognitive and cultural aspects of human memory. Her most recent publication is *Culture Matters: science centers and cultural contexts* in the 2006 *Learning in Places: an informal education reader*, Peter Lang Pub

Andrea Lorenzet

PhD Candidate
Department of Sociology and Social Research
University of Trento, Italy
email: andrea.lorenzet@gmail.com

His main research is on Science and Technology Studies (STS), particularly in themes concerning policy and expertise in technological planning issues. He's also research assistant for Observa – Science in Society (www.observa.it), a non-profit cultural association based in Vicenza, Italy, which aims at promoting the study and the discussion of the interaction between science and society with particular attention to science communication processes.