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The Landscape and Isobars of European Values in Relation to Science and New Technology (ValueIsobars)

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Report on experiences with role play exercises

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Report on experiences with role play exercises:

1.) Introduction:

With the “Science Parliament” WP3 successfully developed a value sensitive and value informed participative exercise that makes visible potential issues and probable consensus of informed publics in respect to technological and scientific developments.
The guiding principle of Value Dialogue is to explore new ways to close the gap between available technological possibilities and the ethical doubts and down-to-earth distrusts of the general public according to S&T and its implications and applications by developing this value sensitive participative exercise. Value Dialogue’s implicit goals are to increase citizen proximity to science and research and to democratize the scientific practice to a greater extent, due to the perspective that research and scientific findings determine the future and the way of life of people widely, but general public mostly doesn’t take part in defining the relevant values and hegemonic visions of a common good that determine and influence the direction of technological and scientific developments and its consequences.
Value Dialogue’s framing focuses on enabling and fostering value informed decision making processes and value centred discussions regarding technological and scientific developments. This value based dialogue is understood as a deliberative supplement to public discourse and quantitative value surveys and as support for policy making, if institutionalized in the policy circle it increases the grade of democratization of knowledge, knowledge production and scientific practices by making visible potential and probable consensus of general public and its underlying and driving values to policy makers and researchers. Further Value Dialogue explores the capabilities of social values obtained in value informed participative exercises for governance-regulations regarding S&T and the validity of these values.

This report on experiences with the developed value based and value informed participative framing ‘Science Parliament’ includes a description of the steps undertaken at the first participatory exercise and focuses on our main goals in this exploratory pilot study:
-To test and develop a value sensitive participatory exercise
-To gain insights on how people perceive the technologies biometrics and pathogen research
-To gain insights on how people develop attitudes regarding the selected technologies biometrics and pathogen research
-To gain insights on values people deem relevant in the context of these technologies and furthermore on value dynamics related to the subjects as well as the significance of this to assess the impact of values for scientific and technological developments and their regulation.
To achieve these goals the established tool “Science Parliament” served as the basic framework for Value Dialogue, replacing the original concept of a role play of an ethical council, as was explicated in deliverable 3.1. In scope of this parliament we identified possible scenarios in scientific and technological developments, we identified underlying

values and value dynamics and explored people's views and expectations regarding the selected topics. Albeit due to the exploratory character of the study the reported results constitute no representative analysis on public's views and expectations.

Introduction to the participative exercise:

On September 15th and 16th 2010 dialog<>gentechnik held a Science Parliament with the focus on values in Wiener Neustadt, Austria (WN).

Approximately 65 Students (aged 16/17) participated, 7 experts attended the expert-hearings and 12 chairs of the European Youth Parliament (EYP) - due to their experience in that field - took part as moderators in the parliament boards. Furthermore 4 people were observing the parliament with focus on garnering ideas and on finding aspects relevant for improving Value Dialogue.

There were six parliament boards with different topics, besides "Dual Use Dilemma in Pathogen Research" and "Biometrics as Security and Surveillance technology" the panels occupied themselves with "Genes and aggressive behaviour", "Personalized medicine", "Appliance of results of genetic testing", "embryonic Stem-cell research". Each parliament board consisted of 8-12 students.

The Science Parliament lasted for two days –not including the problem-centred interviews/evaluation interviews and the introduction event.

The Science Parliament in WN also served as a pilot for the new group exercise, which will be an improved and modified version of the first parliament and is going to take place in Vienna in the final year.

Below we will give you an account of experiences gained with and observations made on the first run of Value Dialogue and of the conclusions which we drew on the basis of these experiences with a particular focus on the analysis whether the described exercise was useful to explore values underlying the designated topics and where it could be improved.

The following chapter will give you a short overview of the protocol of Value Dialogue and of the modified and adapted course of action due to relevant progress in respect to this protocol. For more information on the protocol and on what reasons it was designed in this way please refer to deliverable 3.1.

In the third chapter the course of action as well as its results and outputs will be presented and discussed in detail. Also first conclusions will be drawn. The last chapter summarizes the relevant experiences regarding the Science Parliament and discusses the conclusions.

2.) Course of action in reference to the protocol

First, a necessary contextualization of the report on experiences is the description of the participative exercise we carried out and tested referring the core points of the protocol stated in deliverable 3.1. This is presented in chapter 2.2.
Due to the relevant insights from this analysis the exercise has been modified and the protocol has been adapted as described in 2.3. As a reminder you find the key points of the original protocol below in chapter 2.1.

2.1) Protocol of Value Dialogue:

Step 1, Assessment phase:
-) Method-design and -adaptation due to relevant progress
a.) Pre-test: guided interviews and Multi-Criteria-Mapping (MCM), (questionnaires and phone interviews optional)
-> interim analysis
Step 2, Appraisal phase:
b.) Round table 1: open designed group discussion
c.) Input by experts
Step 3, Risk management phase:
d.) Round table 2: Two panels in the participative framing 'Science Parliament' (integrates role-play and scenario-building elements) have the task to develop a consensus/compromise document and write a closure declaration.
e.) narrative interview/depth interview
Step 4, Analyzing and communication phase:
f.) Final analysis; Critical discourse analysis and evaluation of the framing in general and the closure-process in particular.

2.2) Description of the course of action:

Step1, Assessment phase:

a.) Pre-test

Eight pre-test interviews with lay people were conducted. Four on Biometrics and the Dual Use Dilemma in Pathogen Research, respectively. The interviews took about 10 minutes each and were non-standardized, little structured and oral interviews with an interviewer in a soft/weak role, who posed open and indirect questions. The catalogue of routing questions is made available in the appendix.

Multi-Criteria mapping on Biometrics and Dual Use Dilemma in Pathogen Research:

The Multi-Criteria mapping as the second pre-test instrument was integrated in the Science Parliament to kick off the Science parliament. In order to generate a higher level of value reference and value reflection amongst the participants who took part in the committee work of the youth parliament a specific MCM was performed at the start of the parliament. The MCM consisted of 7 steps and we did two MCM runs on each topic. The MCM consisted of phases of discussion/deliberation and filling in the MCM-questionnaires.

The steps of MCM:

1.) Development of possible scenarios by participants
2.) Selection of scenarios deemed as relevant by participants
3.) Deliberation on criteria possibly relevant for scenario assessment by participants
4.) Scenario Assessment using individually selected criteria
5.) Scenario ranking
6.) Criteria ranking
7.) Sideswipe-scenario discussion

In the first run of the MCM the participants developed scenarios and thought and discussed about relevant criteria on their own. Support was provided regarding technical course of action of the MCM as well as on specific content-related questions posed on the topics by the participants.
In the second run of the MCM possibly relevant criteria and options were presented to the participants and the participants had the possibility to choose if they wanted to take over some of these for their ratings.
Applying MCM, its value-related potential to depict a problem-area by making visible the spectrum of options and criteria has proved useful. The MCM also made visible the *opportunities and risks as perceived by people* in that field and which are realized as important by them. Therefore MCM proved a fruitful instrument to explore possible value trade-offs and the hierarchy of conflicting values regarding an individual and a common good, which will be elaborated on in more detail in chapter three.

Step 2 Appraisal Phase

b.) Round Table 1:

As a conclusion of the pre-test interviews as well as due to the experiences with the MCM and with the round table two (which was antedated due to time-limit considerations) the round table one, which was designed as a process-oriented participation exercise with focus on deliberation and not on decision making was cancelled. (See “Experiences of the Pre-test interviews” and “Experiences with committee work and voting”)

c.) The Expert Hearings:

The expert hearings took between 60 and 90 minutes. The group concerned with biometrics consisted of 9 students. The experts for biometrics were Dr. Martin Kampel of the Vienna University of Technology and Mag. Martin Feigl of the Lower Austrian Chamber of Labour.
The parliament board occupied with Dual Use Dilemma in Pathogen Research consisted of 12 students. Our expert on Dual Use Dilemma Pathogen Research was Dr. Johannes Rath of the University of Vienna, Department of Evolutionary Biology.
After a topic introduction of approximately 40 minutes by the experts the students had the opportunity to pose questions and to discuss relevant issues with the scientists. The expert hearing was integrated in the Science Parliament and a preparation for round table two. Both expert-hearings have been recorded.

Step 3 Risk-Management phase

d.) Round table 2

The round table 2 took place as parliament boards of the Austrian Science Parliament. This Parliament boards were closure oriented participative exercises, which were moderated by chairs of the European Youth Parliament, EYP. Students acted as delegates by deliberating the issue and working out a resolution. Finally this resolution was presented to the plenum of more than 60 students, which voted on the resolutions after a structured discussion.

e.) Problem-centric interviews

To evaluate the framing of the exercise and to learn more about the understandings of values of participants, roughly twenty problem-centred interviews were conducted. Each interview of approximately 35 minutes was recorded and conducted between two and three weeks after the parliament. The catalogue of routing questions of the problem-centred interviews is attached in the appendix.
Although in the protocol narrative interviews were scheduled, we decided that problem-centric interviews, which are quite similar to narrative interviews, but are a little bit more structured, are more adequate to shed light on our research questions.
The interviews consisted of two parts, in the first part participants were asked to narrate what they remember of the parliament and which impressions they had. They were also asked what they remember of the resolution and which points of the resolution were the core points for them. Then they were asked to make propositions for improvements and to state what they liked best and what they didn't like or felt that was senseless.
The second part of the interview - that was held as a problem-centred interview - was focused on values and what they mean for the participants, how they understand them, which contexts they associate with certain values and what is the significance of the values in the context of the discussed issues ‘Biometrics’ and ‘Dual Use Dilemma Pathogen Research’.

The interviews had the function to track down influences like peer-pressure, persuasive rationality or group dynamics and had the function to provide information on the level of engagement, involvement and identification with the process. On the other hand the interviews had the function to shed light on the motives of the participants and reveal how they understand values and in what way they use values during discussions.

Analysis and Communication phase

Due to the low level of engagement during the committee work and also because of the fact that the level of dispute was low, we decided that the analysis of the transcripts of the committee work would deliver little additional results. We therefore reduced the analysis on the resolutions which were the output of the committee work and on the problem-centred interviews, which were conducted after the parliament. Along with the data gained by the MCM the following objectives related to the Science Parliament I in Wiener Neustadt could be met:

1.) Identification of for participants relevant values related to the two topics.

2.) Identification of participants' views and attitudes on biometrics and pathogen research.

3.) Identification of the participants' perception of attractive scenarios related to biometrics/Pathogen research, Identification of applied values and value dynamics

4.) Test the developed framing and evaluate its implicit dynamics, their significance for the process and the possible representativeness of the framing as well as the validity of its output. Explore the individual understanding and the different meanings of values of the participants.

5.) Assessing the influence/capacity of the collected values and their hierarchy for shaping technologies and guiding research.

2.3 Adaptations and modifications, the implemented protocol:

Adaptations and modifications due to relevant progress during the first participative exercise of Value Dialogue lead to the following protocol:

-Pre-test interviews (First assessment on instruments, framing and dynamics)
-Science Parliament (Checking the potential of the designed appraisal and risk management approach regarding the selected topics by evaluating the potential of the instruments and framings implemented and by observation:)

-MCM
-expert input
-Round table 2

-Problem-centred interviews (Explication of participants values and evaluation of the participative exercise by interviewing the participants)
-Reasoning on the experiences and reporting.

3.) Results, outputs, observations and experiences:

3.1 Experiences of the Pre-test Interviews:

The tenor of the interviewees in the pre-test interviews on biometrics and pathogen research was very homogenous. Participants had never occupied themselves with these issues, had little interest and did not feel that biometrics or pathogen research affects their daily life. They also stated that because of the fact that they did not occupy themselves with these issues it would make more sense to let other people decide details regarding these issues. Phrases like “as necessary”, “when adequate”, “if it makes sense” “if it is useful” were used, but the interviewees were not willing and/or able to define, when certain measures and restrictions were necessary, adequate, useful etc.. The issues were too hypothetical for them due to their perceived lack of information, which prevented them from defining trade-off points. The interviewees actively asked for more information and also tried to get to know the interviewer’s view on these issues.
Because of these experiences we assume that, in order to confidently express value preferences and especially to determine value trade-offs people require a certain information-level, which they regard as sufficient for making reasonable decisions. They need, for example, a well designed context or a convincing narrative which seems decisive, conclusive and relevant enough to them and enables them to put their preferences regarding an issue in an order on this basis. Complex and ambiguous topics with little perceived actual relevance to daily routines fail to offer that kind of frame.

3.2 The Science parliament, experiences, observations, results and output:

3.2.1 Experiences with and results of the MCM:

3.2.1.1 MCM-analysis: Biometrics as Security and Surveillance Technology

8 of 9 participants took part actively in the MCM Biometrics as Security- and Surveillance Technology. As the MCM was conducted in German you find the questionnaire of the MCM in the original German version in the appendix.

First run:

In step one of the MCM participants developed two scenarios. One scenario described a future which is quite similar to nowadays daily routine. The degree of implementation of biometrics in this future is not higher than nowadays, further, biometrics is applied for the same field of functions.

In the second scenario biometrics is applied area-wide and it is applied for new fields of function, e.g. it is used in replacement of credit cards, identity cards and keys in daily routines. Further, it is applied to guarantee a high degree of security; to convict criminals, to secure airports, public traffic in general, or banks. The scenario was named "Increased application of biometrics" by the participants. Three of nine participants voted for that kind of "surveillance society".
The "status quo" scenario was supported by 5 participants. One participant was undetermined, or rather did not want to express his opinion due to language difficulties. Due to the fact that there were only two scenarios ranked in the first run of MCM on biometrics we did not value the individual rankings with points like we did in the second run of MCM on biometrics and in the MCM on Dual-Use-Dilemma in Pathogen Research.

Surveillance society	3 participants
Status quo	5 participants
Undetermined	1 participant

Criteria Weighing:

During deliberation on criteria which are possibly relevant the participants deemed 8 criteria noteworthy for the assessment of the scenarios: Time Saving, Transparency/Control of Personal Finances, Comfort, Fast Pace, Risks, Loss of Control. Below, a short account on –or to be more accurate an interpretation of - the understanding of the criteria by the students is provided. This account is based on subjective observations of the criteria deliberation. The criteria selected were built on theses, which were quite obvious following the discussion. As the evaluation interviews revealed, the understanding of criteria and values did not have a common denominator amongst the students - everybody understood them in his/her own way –, of which more in the subchapter "Experiences with and conclusions on basis of the problem centred interview".
Nonetheless, the participants had the impression of common sense during the process of making their decisions based on the selected - and ambiguous -criteria. This also points towards the integrative function of values due to their ambiguous character and the intuitive way of the use of values in discussions.

Theses which served as basis for the criteria understanding by the students:

Time Saving by applied biometrics increases: Daily routines should be carried out more efficiently by biometric support. E. g. if it was possible to pay via Iris-Scan/fingerprint biometric features would replace the necessity to enter a pin code. Besides, it too seemed an attractive feature to the students that a fingerprint or an iris-scan could replace keys for doors, e.g. at home.

Transparency/control of personal finances by applied biometrics could decrease**:** If for consumers it is possible to pay via biometric features consumers more easily could lose track of their personal finances.

Comfort: No memorizing of codes, no bank or identification cards and faster controlling of passengers for flight security. These criteria were used by some participants synonymous to Time Saving.

Fast pace: Life is organized more efficiently by new technological capabilities, but this could also mean more bustle and requirements.

Risks of misuse and abuse of data and information by administration and companies could become increasingly probable, if biometrics were applied area-wide.

Loss of control: No transparency and control on data that is collected from the citizens. As biometric instruments are not always necessarily obvious to people, data collection and data analysis could even take place illegally or in secrecy.

Sicherheit - security and safety: As the German word "Sicherheit" covers both, the English concepts of 'safety' as well as 'security', there was no clear distinction of the two concepts in the German language discussion, it would have been possible to translate it with both terms. From observing the discussion, we can draw the conclusion that "Sicherheit" was mainly discussed in respect to terrorism, crime and immigration (security), but to some extent also in context of possible health issues connected with new and unproven technologies (safety). Also the participants interviewed after the parliament explicitly referred to "Sicherheit" with respect to security in the criteria weighing, when they explained their understanding of the value 'Sicherheit' in the context of biometrics.

Health Issues were a criterion in the discussion and in the resolution, but were not applied in the criteria weighing. Either this criterion was forgotten by mistake or thought not relevant enough.

Overall criteria weighing, first run:

In this step of MCM the participants were asked to rate the criteria, which they deemed relevant for the ranking of scenarios. Eight of nine participant dispersed a total of 100 points each (one student did not fill out the questionnaire due to language issues). The more important a criteria was in his/her opinion the more points the participant alloted to the criteria. As you see some criteria found and rated by the participants are straight values.

Participant	1	2	3	4	5	6	7	8	**8P**
1.)Security	50	30	20	20	30	30	20	30	**230**
2.)Privacy	20	30	25	30	40	20	25	35	**225**
3.)Time saving	5	10	15	5	10	10	10	5	**70**
3.)Transparency	5	10	10	20	10	10	5	0	**70**

/control of finances									
3.)Comfort	5	15	10	10		10	10	10	**70**
8.)Fast pace	5		5	5	10	0	10	5	**40**
6.)Risks	5	5	5	5		10	15	10	**55**
7.)Loss of control	5		10	5		10	5	5	**40**

Split up criteria weighing, correlative to the scenario ranking:

Criteria weighing of the „status quo“ group:

Participant	1	2	3	4	5	**5P**
1.)Privacy	35	25	40	30	30	**160**
2.)Security	30	20	30	20	30	**130**
3.)Transparency/control of personal finances	0	5	10	20	10	**45**
4.)Comfort	10	10	0	10	15	**45**
5.)Time saving	5	10	10	5	10	**40**
6.)Risks	10	15	0	5	5	**35**
7.)Fast pace	5	10	10	5	0	**30**
8.)Loss of control	5	5	0	5	0	**15**

Criteria weighing of the „Surveillance Society applying biometrics” group:

Participant	1	2	3	**3P**
1.)Security	30	20	50	**100**
2.)Privacy	20	25	20	**65**
3.)Time saving	10	15	5	**30**
4.)Transparency/ control of personal finances	10	10	5	**25**
4.)Comfort	10	10	5	**25**
4.)Loss of control	10	10	5	**25**
7.)Risks	10	5	5	**20**
8.)Fast pace	0	5	5	**10**

As the sample is small, rogue results may strongly distort the ratings. Nevertheless the value trade-off between security and privacy in relation to preferring one scenario over the other, makes sense and accordingly is coherent. Participants who preferred the “Status Quo” over the “Surveillance Society” deemed privacy more important than security. Vice versa the participants who preferred the increased application of biometrics, gave security top priority.

Scenario appraisal of the second run:

Seven of nine participants ranked the scenarios, which were prepared before for the participants, in order to find out which of them the participants deemed more relevant and attractive (Additional to the student with language issues another student did not

participate in the second run of the MCM. This was due to her lack of motivation facing the MCM as a challenging exercise which takes hours.). Then the individual rankings were summarized by giving two points to a scenario for each time it was ranked first by a participant and one point each time it was ranked second in the individual rankings. Altogether 5 scenarios were considered relevant. Two of the prepared scenarios were cancelled.

1.) Three participants ranked the **"Surveillance society light"** first, one ranked it second. **(7 points)**

2.) Two participants ranked the **"Civil rights based societal order"** first, one ranked it second. **(5 points)**

3.) One participant ranked **"Society closed for immigrants"** first, one ranked it second. **(3 points)**

4.) One participant ranked **the "Surveillance society"** first. **(2 points)**

5.) Two participants ranked the **"Night watchman state"** second. **(2 points)**

Scenario descriptions in short:

(In the appendix you find all the original scenarios in German language)

Surveillance Society light: Biometric technologies are increasing security in certain areas, but biometrics has to be dismissed as an area-wide applied technology. The employment of biometrics is regulated and controlled accurately. Government directly invests in this research area or at least fosters it.
In German this scenario was named "Partial Surveillance state"("Partieller" Überwachungsstaat). Probably a better name could have been selected.

Civil rights based societal order: To apply biometrics makes sense in some areas, but civil rights have to be considered thoughtfully and accurately. Use of biometrics may only take place under rigorous rules. Proportionality has to be scrutinized in each case.

Society closed for immigrants: Biometrics is mainly applied to control the access to societal life. Citizens have biometric identities which are checked in all daily routines; shopping, car driving, etc.. The main focus of this all-area surveillance is to prevent illegal immigrants to participate in social life.

Surveillance Society: Biometrics is applied area-wide. Administration has extensive means to apply biometrics, it is its main tool to assure security. All offences and crimes which could be resolved by the means of this technology are prosecuted.

Night watchman state: Biometric technologies are considered an essential threat for the free and open society and are pointing in the direction of totalitarianism. Biometric technologies therefore are banned.

Overall Criteria weighing, second run:

In the second run of MCM on biometrics, possibly relevant criteria were presented to the participants. The additional criteria which they deemed relevant then were rated together with the criteria the participants took over from the first run. Due to the ambiguous character of “Sicherheit” in German it was up to the participants if they wanted to differentiate between security and safety and use these English terms in addition to “Sicherheit”, instead of “Sicherheit” or if they wanted to stick with “Sicherheit” alone and neglect the security/safety distinction.

Participant	1	2	3	4	5	6	7	**7P**
Sicherheit	40				20		30	**90**
Privacy	20	30			20		20	**90**
Social justice	10	5	10	10	10	40		**85**
Comfort	10	25		15	5	5	5	**65**
Safety		30	30					**60**
Equality	10				10		30	**50**
Freedom			40					**40**
Abuse/Misuse	5	5	10			20		**40**
Realism				40				**40**
Dangers						30	5	**35**
Jobs	5	5		15	5	2,5		**32,5**
Security			10	20				**30**
Transparency/control of finances					10			**10**
Life quality					10			**10**
Risks							10	**10**
Loosing control					5			**5**
Feasibility					5			**5**
Costs						2,5		**2,5**

Presented Sideswipe-Scenario, biometrics:

This scenario was designed by WP5 and presented to the participants of the MCM on biometrics during the last step. After reading the text, the participants were asked to

explain if this scenario had changed their mind and to give reasons, why the scenario changed or didn't change their views.

Double-faced facebook:

After the terrorist attacks of 9-11 2001, many western countries have become an advocate of the use of biometrics technologies. Biometrics technologies allow for the identification of a potential terrorist by large scale surveillance, for example at airports. One can also imagine a crowd to be covertly videotaped by the police and the images compared with facial scans of convicted criminals. This amounts to a very large digital line-up, reducing the potential threat terrorists pose for public safety. There are however also mismatches, issues of wrongly interpreted data, and issues of privacy.

Interpol, the Europe-based international law enforcement group, has proposed an automated face-recognition system for international borders. Such a system could require travellers to undergo face scans, and make the information available to numerous countries. An Interpol face-recognition database would permit Interpol member nations to search records containing travellers' personal biometric information, and could be used in conjunction with travel watch lists.

The inaccuracy of facial recognition technology has repeatedly been criticized. Privacy watchdogs have questioned the efficacy and wisdom of government programs that collect ever-more personal information at border crossings. "We need to get our data to the border entry points. There will be such a large role in the future for fingerprints and facial recognition," said Mark Branchflower, head of Interpol's fingerprint unit. (Oct. 20, 2008)

Crowds are no longer merely physically existent but also digitally. In 2009, the Facebook corporation announced that it is bringing advanced facial recognition technology to Facebook by way of a new application called Photo Finder. Using proprietary facial scanning algorithms, this application scans through your photos and those public photos belonging to your friends in order to identify and suggest tags for the untagged people within them. With advanced facial recognition software, anybody will be able to snap a cell phone picture (or video) of a stranger, plug the images into Google and pull up all tagged and untagged photos of that person that exist on the Web. According to a *Sunday Times* report, one journalist who tested the software uncovered a series of unseen and untagged pictures taken by distant friends over several years, triggering forgotten memories of holidays, parties and university life. It also produced a catalogue of pictures for each friend - amounting to an intimate photographic diary of their lives

Users of such software will be able to gather information about people armed with only a single photograph of them. Indeed, they do not even need to know the identity of the person in the photograph before they start searching the web for the subject's details. The main concern is that people will not search for old friends or family members. Employers could use it to check up on the activities of their staff, governments of anybody deemed 'suspect'. And while the practice of 'Googling' people has become relatively common, the facial recognition aspect takes it a stage further.

Many people are concerned that their privacy will be invaded. Governments and other authorities would have the ability to know where you are, and what you are doing, at all times. Some fear that the introduction of biometrics technologies such as facial recognition software could lead to a "surveillance society". This is not to be an underestimated concept as history has shown that states have typically abused such access before. The software used is said to be limited and can be protected to further use. But mismatched individuals being hauled in for questioning: would

find a small comfort to know that the privacy of the people on the "watch list" was protected by the technical

Reactions on the question, if the Sideswipe-Scenario is changing the personal view:

Participant: "Yes, you ponder more about that issue, because the scenario treats relevant and current personal topics."
Participant: "Yes, because the topic is relevant and current."

Participant: "No, I am not influenced by it, because I have already thought of these possibilities."
Participant: "No, my personal view has not changed by reading this article, as I have already been against the exaggerated use of biometrics before."
Participant: "No, I already knew about the privacy issues pertaining 'facebook'."
Participant: "No, because we really extensively talked about the issue, my opinion is settled."

- No comments by three participants.

(These are translations of the statements from German.)

Interpretation of the values, scenarios and views identified in the MCM on Biometrics as Security- and Surveillance Technology:

The usual suspects "security" and "privacy" were the most relevant values for the participants in the context of biometrics.
In the first part of the MCM the participants developed scenarios and generally thought and discussed without external input about the relevant criteria. The majority of participants in this context preferred the status quo and did not see immediate necessity to implement biometrics in everyday life.
The opposing options "Stay with the status quo" or "Improve security by employing biometrics more heavily" were developed by participants and they voted 5 to 3 for the status quo. The voting was also consistent with the value rankings, the status quo group ranked 'Privacy' higher than 'Security' [160 to 130], the 'applying biometrics group' preferred security above all other values in this context and ranked 'Security' higher than 'Privacy' [100 to 65].
Indeed all up security was rated as the most relevant value, but it was only a razor-thin lead compared with privacy.
Although - as afore mentioned - the majority of participants did not see the necessity of a broader employment of biometrics in the first run of MCM, as deliberation about possible scenarios and futures continued and additional options and possibly relevant criteria were introduced to the participants, biometrics as a tool which helps to close security

gaps or as a comfortable and convenient technique became increasingly more attractive. In the context of the second run of the MCM the criteria cluster “Sicherheit” (including security and safety) was clearly rated as most relevant. Also other criteria have been summarized to types of value families in the chart below.

Clusters of criteria (MCM on biometrics, second run)**:**

Security related criteria:								**180**
Security			10	20				**30**
Safety		30	30					**60**
„Sicherheit“	40				20		30	**90**
Freedom rights related criteria:								**135**
Privacy	20	30			20		20	**90**
Freedom			40					**40**
Loss of control					5			**5**
Justice related criteria:								**167,5**
Social justice	10	5	10	10	10	40		**85**
Equality	10				10		30	**50**
Jobs	5	5		15	5	2,5		**32,5**
Risk and uncertainty related criteria:								**85**
Abuse/Misuse	5	5	10			20		**40**
Dangers						30	5	**35**
Risks							10	**10**
Lifestyle-Criteria:								**85**
Comfort	10	25		15	5	5	5	**65**
Transparency/control of personal finances					10			**10**
Life quality					10			**10**
Pragmatic Criteria:								**47,5**
Realism				40				**40**
Feasibility					5			**5**
Costs						2,5		**2,5**

Screening these clusters, it is salient, that the justice related criteria cluster (social justice, equity and jobs), which had been of no consideration in the first run, now with its

altogether 167,5 points was rated higher than freedom rights related criteria (Privacy, Freedom, Loss of control) with altogether 135 points.
Corresponding to the overall criteria weighing results of the second run, scenarios, which included governmental and legislative orders that employ biometrics broadly to assure security and safety, were preferred by participants over scenarios which did not include increased application of biometrics. Further also splitting up the criteria ratings according to the scenarios preferred by the participants, shows criteria (mostly values) and preferences in a coherent picture:

Criteria clustered by scenario preferences (MCM on biometrics, second run):

Surveillance society, surveillance society light and society closed for immigrants:

Participant	1	2	3	4	5	**5P**
„Sicherheit“			40	20	30	**90**
Social justice	40	5	10	10		**65**
Privacy			20	20	20	**60**
Comfort	5	25	10	5	5	**50**
Equality			10	10	30	**50**
Danger	30				5	**35**
Safety		30				**30**
Freedom		30				**30**
Abuse/Misuse	20	5	5			**30**
Jobs	2,5	5	5	5		**17,5**
Transparency/Control of personal finances				10		**10**
Life quality				10		**10**
Risks					10	**10**
Loss of control				5		**5**
Feasibility				5		**5**
Costs	2,5					**2,5**
Security						
Realism						

Night watchman state and civil rights based societal order:

Participant	1	2	**2P**
Realism	40		**40**
Freedom		40	**40**
Safety		30	**30**
Security	20	10	**30**
Social justice	10	10	**20**
Comfort	15		**15**
Jobs	15		**15**
Misuse/Abuse		10	**10**
Transparency/control of personal			

finances			
Life quality			
Risks			
Loss control			
Feasibility			
Costs			
“Sicherheit”			
Privacy			
Equality			
Dangers			

In this pilot study we aimed to mainly draw conclusions on the MCM as an instrument but not on its results. On the one hand the criteria clusters show what kind of analysis could be done and delivered by a value reflective MCM on frontier technologies with participating lay people. - On the other hand with focus on the shift in value ratings, as a result of additional aspects being introduced to the participants, the idea suggests itself, that the amount of information which is made available and the length of deliberation are strongly influencing the output of these exercises. Further, these results suggest that a discourse strand which by chance becomes part of the deliberation, as well as aspects which are inserted in the deliberation process on purpose by the organizers of the event, and of course the design of the framing have extent effects on the output.

Summary: Expressed and rated values remain consistent with the underlying values of the scenario rankings of the same run, nevertheless the hierarchy of expressed values and the gradings between them change, when comparing the first MCM run on biometrics to the second one.
This could be explained by the thesis, that a wider range of options and a bigger supply of values, which could be quoted as relevant regarding the employment of the new technology by the participants and a higher level of *abstraction of the scenarios,* from a context close to everyday-life to a more political context. These factors probably changed the picture of preferences, their underlying values and the rating ratio of expressed values, implying that value hierarchies are strongly context-dependent.

3.2.1.2 MCM-analysis Dual Use Dilemma in Pathogen Research:

12 participants took part in the MCM Dual Use Dilemma Pathogen Research. As the MCM was conducted in German you find the questionnaire of the MCM in the original German version in the appendix.
Unfortunately the procedure of the MCM on Pathogen Research was not strictly adhered to for the second run.
Due to a mistake of the executors, the two runs were mixed up and one of the prepared scenarios of the second run was cancelled by most of the participants (because a similar scenario had already been part of the first run). Although cancelling scenarios has an impact on the mixture of the relation between the scenarios as a whole, the data output of the MCM on Dual-Use-Dilemma in Pathogen Research delivered sufficient interesting

information, due to the fact that overall the scenarios of the first run developed by the participants, and the scenarios of the second run, which had in advance been prepared for them, were quite similar.
Most participants skipped the weighing of criteria of the second run – due to the fact that the executors by mistake thought that the criteria weighing was only necessary in the first run. On grounds of completeness the data collected in the second run is presented below. Fortunately the first run of the MCM shows the potential of this instrument on this topic and is sufficient to come to some conclusions.
Furthermore, a fact to notice is that the sideswipe-scenario in most aspects had already been discussed by participants right at the beginning of the MCM and therefore the question how the selected scenario affected the opinion of each participant regarding the issue was in this case redundant.

Results of the first run:

Overall scenario ranking first run

Each participant ranked the scenarios, which were before developed in the deliberation and had been deemed relevant. Then the individual rankings were summarized by giving two points to a scenario each time it was ranked first by a participant and one point each time it was ranked second by a participant.

1.) Scenario 2: Limitation of pathogen research to certain research centres to warrant secrecy **(19 points)**

2.) Scenario 3: General support of pathogen research by the government, but under strict surveillance. **(6 points)**

3.) Scenario 4 Support by government of the pathogen research in pharmaceutical industry to ensure the availability of low price drugs. **(5 points)**

4.) Scenario 1: Ban of pathogen research if its output can be used for weapons. **(3 points)**

The participants' rankings in detail:

Three participants ranked the scenarios in the following order: 2,1,3,4,
Two participants ranked the scenarios in the following order: 2,3,1,4,
One participant ranked the scenarios in the following order: 2,3,4,1,
Two participants ranked the scenarios in the following order: 2,4,1,3,
One participant ranked the scenarios in the following order: 2,4,3,1,
One participant ranked the scenarios in the following order: 3,2,1,4,
One participant ranked the scenarios in the following order: 4,3,2,1
(Eleven of twelve participants ranked the scenarios.)

Weighing of criteria first run:

During this step of the MCM, the participants were asked to rate the criteria, which they deemed relevant for the ranking of scenarios. Each participant dispersed 100 points all up. The more important a criterion was in his/her opinion the more points s/he allotted to the criterion. As can be noticed, the criteria found and rated by the participants are values.

Participant	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**12P**
Security/Safety	15	30	20	20	20	30	30	15	30	30	40	20	**300**
Right to life	10	25	20	25	30	15	20	20	10	20	15	20	**230**
Justice	15	15	15	25	25	20	15	20	30	20	5	5	**210**
Progress	20	10	20	10	10	15	10	20	10	10	20	20	**175**
Freedom of science/research	20	10	15	15	10	10	15	15	10	10	5	15	**150**
Knowledge /insights	20	10	10	5	5	10	10	10	10	10	15	20	**135**

Twelve of twelve participants filled out the section criteria-weighing.

Results of the second run:

In this run the prepared scenarios were ranked by the participants. As mentioned before scenario 3 was left out by the executers due to the fact that they regarded it as too similar to scenario 1 of the first run. Some of the participants ranked it nonetheless. In principle, the MCM is designed in a way, that gives participants the possibility to leave out scenarios which they feel are not relevant - no matter if the scenario is a prepared scenario or a scenario developed by the participants themselves. In this case the scenario should not have been left out, because similarity, contrary to lack of relevance, is no valid reason for leaving out a scenario - and the participants did not cancel it because of lack of relevance, but because of its similarity.

This time twelve of twelve participants ranked the scenarios. Ten of them only ranked the scenarios 1, 2 and 4. Two of them ranked all four of the prepared scenarios. The two who ranked all four scenarios both preferred scenario 3, the one which was cancelled in the other rankings. This of course distorts the results of the scenario ranking of the second run. Despite of this you find the results below.

1.) Scenario 2 Expansive freedom of research, limited security regulation
(15 points)
2.) Scenario 4 Ban of Pathogen research, overall security regulation
(10 points)
3.) Scenario 1 Overall freedom of research, minor security regulation:
(7 points)
4.) Scenario 3 Limited freedom of research, expansive security regulation
(7 points)

Again the individual rankings were summarized by giving two points to a scenario each time it was ranked first by a participant and one point each time it was ranked second.

The participants' rankings in detail:

Four participants ranked the scenarios in the following order:	2, 4, 1,
Three participants ranked the scenarios in the following order:	4, 1, 2,
Two participants ranked the scenario in the following orders:	2, 1, 4,
Two participants ranked the scenarios in the following order:	3, 2, 1, 4,
One participant ranked the scenarios in the following order:	1, 2, 4,

Overall criteria weighing, second run:

Participant	1	2	3	**3P**
Progress	20	20	30	**70**
Right to life	20	20	10	**50**
Freedom of science/research	15	15	20	**50**
Security/safety	20	15	10	**45**
Justice	15	20	10	**45**
Knowledge/insight	10	10	20	**40**

As mentioned before the weighing of criteria was not carried out properly or rather was skipped by most participants in the second run. Therefore it does not make much sense to interpret this rating, in which only a quarter of the participants took part.

Presented sideswipe-scenario, pathogen research:

This scenario was designed by WP5 and presented to the participants of the MCM on pathogen research during the last step.

The Spanish flue:
The 1918 flue pandemic, better known as the Spanish Flue, was a global pandemic and is believed to have killed more people than the 1st and the 2nd world war put together. About 10% to 20% of those that were infected would die. A more recent transfer of a flue variant from animals to humans took place in 1976. The outbreak was a contamination from swine to humans and occurred at Fort Dix in New Jersey. During that outbreak, 13 solders had severe respiratory illness, and 1 soldier died. A novel H1N1 swine influenza virus (Hsw1N1) was isolated, and

approximately 230 other soldiers displayed evidence of infection. The virus did not spread outside Fort Dix, no swine exposure was ever elucidated, and swine were never definitively established as the source. The incident prompted a massive vaccination campaign that was plagued with problems. A similar scare took place with the H5N1 strain of the bird flu slowly spreading through Asia and recently turning up in other parts of the world.
A team of scientists was able to recreate the Spanish Flue virus on the basis of samples of preserved lung tissue from a frozen corpse found in Alaska's permafrost. The tissue samples were put in a plastic bottle and transported by plane for further research. Teams involved in the research had analyzed the structure of the gene and discovered how subtle alterations to the shape of a protein molecule had allowed it to move from birds to humans with such devastating effects. On October 5, 2005 researchers announced that the genetic sequence of the 1918 flu strain had been reconstructed using historic tissue samples. The 2005 H5N1 bird flu strain spreading through Asia has some features of the 1918 strain but is so far not able to pass easily from human to human. By recreating the virus, the teams involved hope to understand how flue strains that occur in birds or other animals can become transmittable to and between humans. The results, published in the journal Nature in October 2005, offered some parallels between the Spanish flu virus and the H5N1 strain of the bird flue.
Reconstructive research to flue variants such as the Spanish flue would indirectly aid in preventing the spread of a new dangerous variant of the flue, and it may contribute to finding a cure. It may however also be a powerful tool in the wrong hands. In 2001, letters containing anthrax spores were mailed to several news media offices and two Democratic U.S. Senators, killing five people and infecting 17 others. The ensuing investigation became one of the largest and most complex in the United States history of law enforcement. The investigation focused on Bruce Edward Ivins. Ivins was a scientist who worked at the government's biodefense labs at Fort Detrick in Frederick, Maryland. In June 2008, Ivins was told of the impending prosecution, and on July 27, 2008 he committed suicide by an overdose of acetaminophen.

After ranking scenarios, weighing criteria and in this way making value trade-offs by focusing on a certain context, the sideswipe-scenario has the function to be a stress-test for the ratings and rankings done. It should change the frame/context of the discourse. The latter scenario could not accomplish this function due to the fact that nearly all aspects of it had been discussed before and it did not deliver additional information or new points of view to the participants. In particular this sideswipe scenario was designed to make participants think about the security and safety issues of pathogen research, which had been top ranked with all but four participants. In the discussion of the sideswipe scenario many participants explicitly stated, that their strong safety and security concerns could not be strengthened by the scenario.
As a consequence, for the next MCM on pathogen policy as well as biometrics, we will prepare more sideswipe-scenarios and then spontaneously select the one which is most in contrast with the hegemonic view of the participants and which delivers most aspects neglected and not discussed by the participants.

Interpreting the values, scenarios and views identified in the first run of the MCM Dual-Use-Dilemma in Pathogen Research:

The MCM on Dual-Use-Dilemma in Pathogen Research shows that the participants deemed the values security, safety, justice and right to life clearly higher than values like progress, knowledge and freedom of research. This also corresponds, again, to the scenario ranking of the first run in which pathogen research limited to specific research centres to warrant secrecy (and so minimize the chances of abuse like bioterrorism and dissemination of knowledge to rogue states) and the support of pathogen research under strict governmental surveillance were the most attractive scenarios for participants. This makes clear, that pathogen research in the participants' views is being perceived as dangerous in the first place and only subordinate to this do the participants see it as a chance to promote knowledge and progress and, associated with it, a chance to cut down threats to people's health like epidemic diseases caused by nature.

Experiences with MCM as an instrument for value informed deliberation and decision making:

Based on these results of the MCM on biometrics and pathogen research, it can be stated that the identification of values relevant for the participants in relation with biometrics and with pathogen research and the identification of participants' views, attitudes and perception of attractive scenarios regarding biometrics and pathogen research, respectively, was successful. Questions raised in this respect are: How stable are the values, views and attitudes of participants and to which extent are these as drivers identified values valid and transferable to other contexts.

It should also be noted that due to the fact that participants only ranked the scenarios which were attractive to them, they possibly focused on criteria relevant for these selected scenarios. We would get a more comprehensive picture of the participants' value systems, if participants would also grapple more extensively with the scenarios they do not like and so deliver information on the values threatened by these scenarios. Attractive scenarios tend to promise to delete the lack of a certain value in a certain context and to increase the scope in which a value is perceived as valid. Unattractive or even feared scenarios in spite of this do not primarily promote a value held dear but they threaten a value relevant to people. This is certainly a thing which could be improved easily in the next exercise and in this way also a measurement of polarisation on issues could be available.

Further, MCM presents itself as a fruitful and powerful kick-off-instrument to increase value-consciousness in deliberation and decision-making. Although it is capable of depicting the value hierarchies of participants and to make visible accepted and attractive scenarios, MCM is also an exercise which needs time and which calls for motivation, involvement, engagement and full concentration by the participants. In that respect it is also necessary to improve the course of action. At the Parliament in WN we conducted the MCM 3 hours en bloc. This was overburdening for some of the participants and also influenced the return rate regarding the MCM questionnaires. As a consequence, the MCM will be split up in future.

Experiences with the Expert-hearings:

The expert advice provided had the function to foster the participants' feeling of being competent and to encourage them to contribute to the output of the exercise and to improve it.
Overall, the expert hearing achieved that goal. Some aspects which the students learned in this hearing were taken into consideration during the ongoing deliberation on the resolution. The feedback given in the evaluation interviews of the students on the expert hearing was positive. They described it as an interesting and informative part of the parliament which helped them make decisions.

Round_table 2, the committee work of the Science Parliament boards and its output:

After the MCM on the selected topics and after the expert hearing, the students in each board collectively worked on a resolution regarding their given topic. The resolutions were written aware to the fact that this resolution had to be presented in plenum for voting.

The resolutions:

MOTION FOR A RESOLUTION BY THE COMMITTEE ON BIOMETRICS

Biometrics used as a technique for security and surveillance

The Science Parliament states the following:
A. Aware of the fact that biometric identification can guarantee time savings and increased comfort,
furthermore since it makes the use of traditional methods of identification unnecessary.
B. Convinced that these methods can enable a rapid and definite identification in most cases.
C. Believing that this can further be used to gain information about the movement of immigrants into
the EU.
D. Confident that the security of public buildings and places can be ensured, using biometric access
controls.
E. Keeping in mind, that biometric evidence can be used to solve crimes.
F. Deeply concerned that excessive use of biometric scanners could have a negative health effect.
G. Noting with concern that a state of constant surveillance would lead to psychological pressure and
severe restriction of personal freedom.
H. Alarmed by the possibility of abuse of biometric information within the EU as well as in third countries with more permissive privacy regulations.
I. Fully convinced that tendencies towards a total surveillance society shall be viewed with great scepticism.

The Science Parliament demands:

1. Calls for the enactment of strict laws that regulate the collection and use of biometric data.
2. Urges for stringent monitoring of stored data and its timely deletion.
3. Recommends biometric identification only to be used in locations relevant for security (e.g. banks,
public offices, airports).
4. Further discourages the use of biometry in public transports apart from air traffic.
5. Encourages the exclusive use of randogenetic features and movement patterns for identification.
6. Further calls for intensive research on possible health risks of biometric scanners.
7. Encourages the EU to lead negotiations with third countries concerning the harmonisation of immigration policies bound to unitary data protection policies.

MOTION FOR A RESOLUTION BY THE COMMITTEE ON PATHOGEN RESEARCH

The abuse of pathogen research: How to deal with the dual use dilemma?

The Science Parliament states the following:
A. Deeply concerned about the possibility to use the results of pathogen research for military purpose.
B. Aware of the fact that the increased life expectancy leads to demographic and financial problems for
the state.
C. Taking into account that the implementation of national legislation within an international level is
rather complicated.
D. Realising with concern that accidents in pathogen research facilities bear above-average risks.
E. Further noting that basic research generally leads to knowledge gain.
F. Taking into consideration that the costliness of pathogen research leads to an increased pricing pressure within the pharmaceutical industry.

The Science parliament demands:
1. A ban of scientific research for military purposes.
2. Calls for an increased international collaboration and the implementation of internationally binding
safety standards.
3. Further calls for the implementation of a fund aimed at financially supporting involved developing
countries.
4. Requests an international boycott of bioweapons as well as the enforcement of harsh punishments and
(economic) sanctions against countries breaching this boycott.
5. Further encourages a stricter international monitoring of pathogen research and of the im- and export

of pathogens by means of a superior public authority.

Preliminary structure analysis: Abstracting Values from the Resolutions:

Biometrics:

A. Aware of the fact that biometric identification can guarantee time savings and increased comfort,
furthermore since it makes the use of traditional methods of identification unnecessary.
and
B. Convinced that these methods can enable a rapid and definite identification in most cases.
-> Efficiency (2x), Effectiveness(2x), Comfort (2x)

C. Believing that this can further be used to gain information about the movement of immigrants into
the EU.
-> Power, Control, nationality, Security

D. Confident that the security of public buildings and places can be ensured, using biometric access
controls.
-> Security

E. Keeping in mind, that biometric evidence can be used to solve crimes.
-> Justice

F. Deeply concerned that excessive use of biometric scanners could have a negative health effect.
-> Safety

G. Noting with concern that a state of constant surveillance would lead to psychological pressure and
severe restriction of personal freedom.
-> Individuals' Freedom, Privacy, Life Quality

H. Alarmed by the possibility of abuse of biometric information within the EU as well as in third countries with more permissive privacy regulations.
-> Privacy, Data Security,

I. Fully convinced that tendencies towards a total surveillance society shall be viewed with great scepticism.
-> Democracy, Privacy, individuals' freedom

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1. Calls for the enactment of strict laws that regulate the collection and use of biometric data.
-> Privacy, Anonymity, Individuals' Freedom

2. Urges for stringent monitoring of stored data and its timely deletion.
-> Privacy, Anonymity, Individuals' Freedom

3. Recommends biometric identification only to be used in locations relevant for security (e.g. banks, public offices, airports).
and
4. Further discourages the use of biometry in public transports apart from air traffic.
-> Value-trade off: Proportionality and necessity of security referring to the values of 1. and 2.

5. Encourages the exclusive use of randogenetic features and movement patterns for identification.
-> Equality, Anonymity,

6. Further calls for intensive research on possible health risks of biometric scanners.
->Safety

7. Encourages the EU to lead negotiations with third countries concerning the harmonisation of immigration policies bound to unitary data protection policies.
-> Data security

Values abstracted: Privacy (5x), Individuals' Freedom (4x), Anonymity (3x), Security (3x), Data Security (2x), Safety (2x), Life Quality, Democracy, Equality Justice, Efficiency (2x), Effectiveness (2x), Comfort (2x), Power, Control, Nationality,

Pathogen Research:

A. Deeply concerned about the possibility to use the results of pathogen research for military purpose.
-> Security, Peace

B. Aware of the fact that the increased life expectancy leads to demographic and financial problems for
the state.
-> Costs/Financial Feasibility

C. Taking into account that the implementation of national legislation within an international level is
rather complicated.
-> Feasibility

D. Realising with concern that accidents in pathogen research facilities bear above-average risks.
-> Safety

E. Further noting that basic research generally leads to knowledge gain.
-> Knowledge, Progress

F. Taking into consideration that the costliness of pathogen research leads to an increased pricing

pressure within the pharmaceutical industry.
-> Cost-effectiveness

The Science parliament demands:
1. A ban of scientific research for military purposes.
-> Peace, Security

2. Calls for an increased international collaboration and the implementation of internationally binding
safety standards.
-> Safety,

3. Further calls for the implementation of a fund aimed at financially supporting involved developing
countries.
-> Justice, Equity

4. Requests an international boycott of bio-weapons as well as the enforcement of harsh punishments and
(economic) sanctions against countries breaching this boycott.
-> Peace, Security

5. Further encourages a stricter international monitoring of pathogen research and of the im- and export
of pathogens by means of a superior public authority.
-> Transparency, Security

Values abstracted: Security 4x, Peace 3x, Safety (2x), Cost-effectiveness, Costs/Financial Feasibility, Feasibility, Knowledge, Progress, Transparency, Justice, Equity,

Experiences with committee work and voting

The list of criteria and values which could be abstracted from the Resolution document on Biometrics is neither identical nor quite similar in its prioritizing to the value distribution of the MCM-criteria-ratings. Whereas security, safety and justice related values were allotted uttermost importance in the ratings, privacy, anonymity and individuals' freedom have a similar significance in the resolution.
The resolution on pathogen research prioritized demands, proposals and statements based on values security, safety and peace. However criteria like freedom of research, progress and knowledge, which were deemed relevant for the MCM-ranking and -rating have a minor role in this document. To make it more obvious: Security/Safety, Right to life and Justice had altogether 740 points in the MCM-rating on pathogens in the first run. Progress, Freedom of Science/Research and Knowledge/Insights were rated with 460 points altogether. Whereas the significance of the values of the first mentioned group becomes quite obvious in the resolution, the significance of the second group of values expressed in the ratings does not mirror in the resolution, values of that group are

rather equivalent to other values which have not been made explicit in the ratings, e.g. cost-effectiveness and feasibility. -
One reason possibly is the input of the expert hearing which shifted priorities, rankings and ratings by delivering new information. Other factors could be the ongoing deliberation itself, which influences point of views, and the attempt to devise a consensual resolution, which includes trade-offs. -The ratings and rankings of the MCM were filled out by each participant on his own and were no consensus, even if scenarios and criteria were discussed before.
This again points to the thesis, that value weighing is context relevant and influenced by the kind of available information. Besides it also suggests itself that validity of values is situative in the sense that e.g. the role "delegate" fosters the reflection of other values than for example the role MCM participant does. The goal and the task are always embedding the structure of values.

Another observation to note is that although we delivered and prepared as much information as possible to facilitate value-reflecting discussion and deliberation on the issues, activity of the discussion and the willingness of the participants to dispute was rather low. It was noticed by several observers of the Parliament, that especially the committee work was coined by a low level of engagement, involvement and willingness to dispute. This was due to the complexity of the topics and due to the fact that the students - although they gathered little information before and also were briefed on the topics - did not feel competent and well informed enough to develop different and personal points of view and they were – it seemed - not convinced of the necessity to develop a as good as possible resolution for common good and to fight for it.
This leads to Round table_1 which was designed as an exercise that prepared as few information as possible (for the participants) and as much as needed to have an ongoing deliberation. In the light of round table two, it does not seem as a fruitful approach which could result in qualitative and quantitative relevant output.
One possibility to increase the motivation of participants and improve this issue in regard to round table_2 would be to make the impact and the significance of the output of this exercise more visible. This would mean that the relevance of the document is clearly not reduced to a presentation, which function mainly is perceived as a demonstration of the existence of consulting exercises and as a public relation measure subsumed under "administration cares". Participants have to be convinced of the seriousness and the purpose of the exercise, which is only motivating, if it goes beyond producing paper tigers.
In regard to the voting in plenum the interviews held revealed that not all participants were focusing on finding the best solution/resolution for common good, but that the plenum and the votes also were influenced by competitive behaviour and rivalry. In contrast to the committee work the willingness to dispute was obviously high.
Possibly this could be brought about by aspects of the framing, which were noticed of the Science Parliament observers regarding the focus of the parliament board chairs on the formality of the process, which overlaps on some points with the focus on the content, explicitly with high standards of finding best remedies. To improve this on the one hand an extended time frame, on the other hand less focus on the success and the ballot-adequateness of the resolutions could be the right approach for the next parliament.

Experiences with and insights based on the Problem-Centred-Interviews:

In the first part of the interview the focus was on the impressions which the participants gained about the process and on evaluating to which extent factors like “peer pressure”, other “group dynamics” or “persuading rationality” were influencing the output.
The factors “peer pressure” and “persuading rationality” could not be tracked down in the scope of the problem centred interviews. Possibly we took the wrong approach to that, as conflict and dispute readiness/willingness related to accustomed communication-situations etc. definitely played a major role. However, each interview would have taken by far more time to cover these issues too.

As expected, the moderators’ personalities and the kind of briefing they got were factors influencing the direction and quality of discussion. This was confirmed by observation as well as by feedback obtained in the interviews.
Although we expected that and tried to minimize these factors in the process by goal- and course of action-definition/adjustment with the representatives of EYP before the parliament, there were obviously deficits in the information chain, what we will have to improve in preparation to the next parliament.

Most interesting and fruitful were the obtained insights on the relation between the personal preferences and values and their sustainability:
All the participants highly identified themselves with the closure-document/the resolution and its recommendations, but as it became obvious, the majority of participants to some point were not able to quote the core arguments brought forward during the deliberation (or other arguments) that leaded to the recommendations during the deliberation. Further the understanding of values was highly heterogeneous, vague, non-reflected and individual. In the parliament board discussions there was no deliberation, if the understanding of values and their meaning is shared. The shared understanding/meaning was assumed implicitly by nearly all participants. The few, who realized a differing understanding of a value did not take initiative to problematize that and to establish a shared/common meaning of the problematic value. E.g. justice was used and understood synonym for: the good, formal justice, equality, commutative justice, distributive justice and so on. The distinction of comfort, fast pace and time saving was not clear to most participants too, they used the terms undifferentiated and synonymous.
Stating that, both a discussion on understandings and meanings of for the participants relevant values at the beginning of the parliament and integrated value explication interviews similar to the second part of the problem-centred interviews, could be improvement to raise awareness of the participants on that issues and shed light on participants' value systems, respectively.

Conclusion:

In this exploratory pilot study our main goal was to gain insights on how people perceive the selected technologies, to explore which values are relevant in regard to the selected technologies, to learn about value dynamics and the way people develop attitudes on S&T, and last but not least to test a participative exercise for further development. Referring to these goals we gained the following results and insights:
The identification of the values relevant for participants in respect to biometrics and pathogen research as well as the identification of participants' views and attitudes regarding these issues and the identification of scenarios deemed attractive by participants has been successful. Regarding biometrics Participants deemed "Sicherheit" – Security and Safety -, Privacy and Justice most relevant. Regarding pathogen research security, safety, right to life, peace and justice were the most relevant values for the participants. The usual suspects generally speaking.
The identification of participants' views and attitudes on biometrics and pathogen research revealed, that biometrics by the participants is perceived as a chance and as an attractive technology to guarantee security and increase convenience. Considerations with respect to biometrics as possible threat to individuals' rights like privacy, anonymity are overlapped by this attractiveness. Pathogen research first and foremost is perceived as a danger. Its potential regarding disease prevention and therapy was visible but not really attractive for the participants, they rather focused on the issue biological warfare and bioterrorism.
On value dynamics and attitude development above all the results of the MCM on biometrics shed light. As stated in the interpretation of values, scenarios and views identified by the MCM the values and scenarios were consistent in the same run of the MCM, but due to the information provided the hierarchies of expressed values, the attractiveness of scenarios (and hence the underlying values of these scenarios) and the perception of the issue shifted. Further, the resolution on biometrics which has been worked out after the MCM and after the expert hearing also focuses different aspects and has a changed setting of priorities. These observations suggest, that values and attitudes are deeply connected with each other, but that the information available - and hence the issue frame/context - for individuals strongly influences which values are perceived as relevant, which values are quoted or actualized within an attitude or which values are applied as drivers of an attitude. Another observation made in the problem-centred interviews on values and their significance for forming attitudes, views and common sense within a group, is the ambiguous and vague character which is linked to their non-reflective and intuitive use in deliberations. These features have an integrative function and promote the possibility of consensus within a group. The sustainability, the transferability and the representativeness of a consensus reached in this way is, due to the value dynamics described above, an open question.

Assessing the capacity of the collected values and their hierarchy for shaping technologies and for guiding research in harmony with general public's needs, hopes and social values with regard to the framing of the Science Parliament:
Due to these observations it seems likely that results regarding values and preferences which are related to fields with low engagement or to topics with a certain grade of

complexity and which are gained in any participative framing have low validity – due to a high arbitrary factor in the process of decision making - and even lower representativeness in relation to general public, due to values' individual, vague, blurred and context-dependent character. The context of being briefed and getting information on the issue, discussing with experts and developing a resolution in the framing 'Science Parliament' is not corresponding to e.g. the context of lay people who are asked on the street to express their attitude about one of these issues.

When people casually form their view on an issue based on several newspaper articles the function and significance of values may be similar, but due to the information level regarding the issue and due to the fact that newspaper readers do not have to find a consensus with other citizens or defend their view in public, and due to the fact, that they usually neither have the time to occupy themselves with very specific topics like pathogen research deeply, the views of lay people are probably less sustainable and there is probably fewer identification with these views in comparison to the views of the lay people who as participants of the Science Parliament were investing time and mental work and who were supported in their endeavour by experts.
In respect to Value Dialogue and the Science Parliament it is ascertainable, that the ambiguous, vague and blurred use of values as argument tools enables values to have a highly integrative and consensus-promoting function in decision-making exercises. Both could be a consequence of partly inconsiderate and inconsistent belief systems of people.

Added up for the procedure of Science Parliament it means, that it works in the respect that we can create participants' identification with its complex matters reflecting outputs, but that the necessary amount of engagement of participants to make decisions, with which they identify themselves also leads to preferences and values that would probably not be applied by citizens that don't participate in a similar framing. This dilemma - I suppose - can not be solved, as participants only are willing to make decisions in the framing of a participative exercise, when they identify themselves with these decisions and when participants have the impression to have the competence to make meaningful decisions and perhaps also the possibility to influence major decisions. In respect to that information supply and a basic engagement are fundamental, especially in regard to complex or scientific matters.

What does that mean in general for the usefulness and the capacity of in participative exercises collected 'expressed' and 'applied' values regarding certain technologies and value hierarchies?
These values could of cause be quoted in codes of conducts and also the comparison between different countries and the outputs of their Science Parliaments could be interesting. But these values will not directly guide to a roadmap of what general publics and people want in regard to the possibilities of a certain technique and its research direction.
But what value hierarchies and preference rankings related to complex and abstract matters, and obtained respectively worked out in participative exercises, can do, is to show the consensus potential of an informed and engaged public. It shows, what general public probably might think, if it on the one hand would care, and on the other hand would be informed better.

Regarding the resolutions the questions could be posed if they better reflect/represent the values of general public than other approaches do, but anyway, these resolutions can give policy-makers as well as scientific researchers additional information on perceived issues and perspectives of people not integrated in scientific or political practices usually and therefore are a valuable qualitative supplement to tools and information already available.

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Appendix:

Catalogue of routing questions of the Pre-test interviews:

Pre-test-Interview questions Biometrics:
(Not all questions of this catalogue were posed in all interviews, this list served as a guideline.)

What are your associations regarding the term “science”?
What is your opinion on science?
What task and what function do you think science fulfils?
What do you think government has to do in respect to science?

Which kind of technology will, in your opinion, influence the future of mankind in a very positive way?
Which kind of technology will, in your opinion, influence the future of mankind in a very negative way?
Which technologies have the biggest potential for mankind?
Which technologies pose a potential threat to mankind and our current way of life?

Introducing biometrics shortly:
There are different biometric methods to recognize and identify humans based on intrinsic physical or behavioural traits. Examples for biometric technologies are finger print identification, DNA-profiling, face recognition, retina or iris-recognition, palm print identification, voice recognition, etc.

Do you have any personal experiences with this kind of technology?
What do you know about this kind of technology?
What do you know about implementation and possibilities of this technology?
Where do you get information about these topics?
What do you think of biometrics?
Do you think biometrics is a topic that will affect your life in future?
What social values are related to a technology like biometrics?

What measures to control/secure global and local traffic are, in your opinion, very important?
In which areas improvement is necessary?
In which context security should be improved?
In which context should privacy and freedom be better protected?
Where do you think biometrics should not be implemented/applied?

What kind of data regarding yourself should not be available to administration and public?
In general, do you feel secure?
Are you concerned about biometrics?

Do you think researchers are behaving in a responsible and sensitive manner in regard to ethical considerations?

Do you see any social values endangered by biometrics?
What values do you think are the drivers of the implementation of biometrics?

Pre-test-Interview questions Dual-Use-Dilemma Pathogen Research:
(Not all questions of this catalogue were posed in all interviews, this list served as a guideline.)

What are your associations regarding the term “science”?
What is your opinion on science?
What task and what function do you think science fulfils?
What do you think government has to do in respect to science?

Which kind of technology will, in your opinion, influence the future of mankind in a very positive way?
Which kind of technology will, in your opinion, influence the future of mankind in a very negative way?
Which technologies have the biggest potential for mankind?
Which technologies pose a potential threat to mankind and our current way of life?

<u>Introducing Pathogens shortly:</u>
A prion, a fungus, a bacteria or a virus can be a pathogen. Pathogens are infectious agents which provoke diseases. E.g. plague, the spanish flue/Influenza, malaria, and so on. In principle, it is possible to differentiate between human pathogens and plant pathogens.
Research in this field on the one hand can enable the discovery of new vaccines and prevent epidemics. On the other hand research in this field could be done for hostile purposes, e.g. for biological warfare or bioterrorism. Pathogens could be a key to cope with environmental catastrophes like oil pest, it could be a key in the war on drugs by destroying coca plantations with fungus, but it also could be used to provoke crop failure and famine.

Do you think research in that field should be restricted?
How should research in this field be restricted?
How can safety and security be guaranteed, in your opinion?

Who, do you think could primarily misuse insights of pathogen research?
Who should determine which kind of research is permitted and which is forbidden?
Do you trust researchers/politicians/administrative officers/military/ethical councils regarding this issue?

How much risk is acceptable in disease reseaech?
How to cope with uncertainty related to progress?

What values are related to this issue?

Do you see any conflicting value related to the issue?

Do you have an idea how to solve the problem, that on the one hand pathogen research has great potential to reduce public health threats and on the other hand can produce new threats?

Multi-Criteria-Mapping, provided scenarios, provided criteria and questionnaires:

MCM on Biometrics as Security and Surveillance Technology:

Scenarios and questionnaire:

<u>Vision 1: Präventionsstaat als der sichere Staat der Zukunft</u>
Argumentation/Einschätzung Biometrie als Sicherheitstechnik:
Die biometrische Identifikation von Personen und die weitgehende Implementierung dieser Technik im Alltag bietet vielversprechende Möglichkeiten die Sicherheit im Zusammenleben zum Wohle der Gesellschaft zu erhöhen.

Option-Legislative:
Die Ausweitung der Befugnisse der Exekutive und Bereitstellung umfangreicher Mittel für Technikumsetzung und für die Schulung von qualifiziertem Personal.

Option-Exekutive:
Der Schwerpunkt der Tätigkeit der Exekutive liegt im biometrischen Sicherheitsbereich, umfangreiche Kontrollen an allen öffentlichen Orten und besonders an Hotspots wie Flughäfen, Bahnhöfen, Regierungsgebäuden, etc.

Option-Judikative:
Sämtliches verfügbares biometrisches Beweismaterial wird zugelassen. Auch kleinere Delikte, die durch Biometrik aufklärbar sind, werden mittels dieser Technik verfolgt.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

<u>Vision 2: Der „partielle“ Überwachungsstaat</u>
Argumentation/Einschätzung Biometrie als Sicherheitstechnik
Biometrische Identifikation ist eine Technologie, die Sicherheit in gewissen Bereichen verbessern/gewährleisten kann, die aber als global bzw. allgegenwärtig angewandte Überwachungstechnik abzulehnen ist.

Option-Legislative:
Biometrie wird als Sicherheitstechnik zum punktuellen und zielorientierten Einsatz für Ermittlungsbehörden freigegeben/gesetzlich gedeckt. Mittel zur Investition in diese Technologie werden dem Staatsapparat begrenzt freigegeben.

Option-Exekutive:
Ermittlungsbehörden kommen ihrer Verpflichtung nach in ihren Erhebungen transparent zu sein und Eingriffe in Persönlichkeitsrechte zu rechtfertigen. Jegliche Amtshandlung geschieht juristisch gedeckt und erfordert bei personenbezogenen Ermittlungen richterliche Verfügungen.

Option-Judikative:
Biometrisches Beweismaterial wird nur unter bestimmten Auflagen und mit fundierter Begründung zugelassen.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

<u>Vision 3: Bürgerrechtsstaat</u>

Argumentation Einschätzung Biometrie als Überwachungstechnik

Biometrische Identifikation ist eine Technologie, die Sicherheit in gewissen Bereichen theoretisch verbessern/gewährleisten kann, dies darf aber nur unter starker Berücksichtigung der Bürgerrechte erfolgen, d.h. die Verhältnismäßigkeit muss genauestens und von Fall zu Fall abgewogen werden.

Option Legislative

Biometrie wird als Sicherheitstechnik zum punktuellen und zielorientierten Einsatz unter sorgsamer Berücksichtigung der Bürgerrechte (Datenschutz, Privatsphäre, etc.) für Ermittlungsbehörden freigegeben/gesetzlich gedeckt

Option Exekutive:

Nur gewisse Ermittlungsbehörden dürfen Biometrische Verfahren unter strengen Auflagen einsetzen. Jeder Einsatz muss beantragt, stichhaltig gerechtfertigt und richterlich verfügt werden. Unabhängige Verwaltungsorgane überwachen und kontrollieren den Biometrieeinsatz, der transparent und genauestens dokumentiert werden muss.

Option-Judikative:

Biometrisches Beweismaterial wird nur unter strengen Auflagen und umfangreicher, nachvollziehbarer und stichhaltiger Begründung zugelassen.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Vision 4 Nachtwächterstaat:
Argumentation Einschätzung Biometrie als Überwachungstechnik:
Die Biometrik ist eine existentielle Gefahr für die freie und offene Gesellschaft und ein Schritt hin zum Totalitarismus.

Option-Legislative:
Die (weitere) Implementierung der Biometrik als Sicherheits- bzw. Überwachungstechnik im Alltagsleben wird vom Gesetzgeber aufgrund ihres Missbrauchpotentials und unter Bezug auf Freiheits- und Bürgerrechte unterbunden.

Option-Exekutive:
Biometrik wird weder offiziell noch inoffiziell als Überwachungs-, als Ermittlungs-, als Nachrichtendienst- oder als Sicherheitstechnik verwendet. ->Biometrikverbot

Option-Judikative:
Verstöße gegen das „Biometrikverbot“ werden strengstens bestraft, sowohl mittels Amtshaftung als auch durch persönliche strafrechtliche Verfolgung der Verantwortlichen.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Vision 5 „Neoliberale“ Staat

Argumentation/Einschätzung: Biometrie als Wirtschaftsfaktor.
Biometrie ist eine Technologie, die neue Dienstleistungen ermöglicht. Durch Biometrie kann der privilegierte Zugang zu Luxusgütern bzw. der gestaffelte Zugang zu diversen Dienstleistungen in Ämtern oder Geschäften geregelt werden. Diese kundenorientierte Marktsegmentierung schafft Arbeitsplätze, einerseits da Nachfrage nach neuen personalisierten Dienstleistungen geschaffen wird und andererseits, da die breite Implementierung der Biometrie als dienstleistungsregulierende Technik auch geschultes Wartungspersonal erfordert.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Vision 6 Klassenstaat, die segmentierte Gesellschaft:
Argumentation/Einschätzung: Biometrie als sozialer Zugangs/Segmentierungsmechanismus

Die Inanspruchnahme von öffentlichen und privaten Dienstleistungen sowie der Zugang zu diversen Ressourcen benötigt eine biometrische Identität (bzw. einen in allen/den meisten Datenbanken gespeicherten „biometrischen Pass“). Aufgrund der technischen Entwicklungen (Innovation/Fälschungsproblematik) muss dieser Pass regelmäßig erneuert werden. Dies ist kostspielig und nicht jeder kann sich das leisten. Des Weiteren ist es oft auch notwendig sich in spezielle biometrische Datenbanken einzukaufen um Zugang zu Dienstleistungen und Institutionen zu haben.
Dies führt dazu, dass das Leben der Wenigverdienenden massiv von sozialem Ausschluss aufgrund mangelnder „biometrischer Identität“ geprägt ist.

Szenario-Bewertung:

Kriterien	Szenario-Performance	Minimum-Performance	Maximum-Performance

Faktoren (optional):	a,b,c

Vision 7 Der Inselstaaten

Argumentation/Einschätzung: Biometrie als nationale Zuwanderungssteuerung.

Jede/r BürgerIn eines Landes verfügt über eine „biometrische Identiät“, ohne die Teilnahme an sozialem Leben nicht möglich ist, da sie für beinahe jede Tätigkeit notwendig ist (Lebensmitteleinkauf, Theaterbesuch, Autofahren). Biometrische Identität heißt diesbezüglich, dass man in einer zentralen Datenbank gespeichert ist, auf die ständig und von überall zugegriffen werden kann.
Diese biometrische Identität ist prinzipiell für BürgerInnen (EU, USA, Japan, Kanada, Australien) kostenlos, ausländische Reisende und Zuwanderungswillige können diese käuflich erwerben. Bei qualifizierten Zuwanderungswilligen wird nach Bedarf der Nationalökonomie von Beamten über die kostenlose oder mit geringen Kosten verbundene Erteilung einer biometrischen Identität entschieden.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Szenario-Ranking
Die Szenarien werden geordnet, das attraktivste oder ansprechendste Szenario als Nr.1, etc.:

	Nr.1
	Nr.2
	Nr.3
	Nr.4
	Nr.5
	Nr.6

	Nr.7
	Nr.8
	Nr.9

Kriteriengewichtung
100 Punkte werden insgesamt vergeben, alle Kriterien die in der persönlichen Bewertung der Szenarios eingesetzt wurden, können dabei gewichtet werden.

MCM on Dual Use Dilemma in Pathogen Research:

Scenarios and questionnaire:

Szenario 1 Totale Pathogenforschungsfreiheit, geringe Sicherheit:
Argumentation und Einschätzung: Pathogenforschung als große Chance für die Menschheit, die genutzt werden muss. Auch potentielle Risikoforschung ist als „business as usual“ zu betrachten:

-Bei Pathogenforschung gibt es wie bei jeder Forschung ein Restrisiko, das man in Kauf nehmen kann/muss.
- Wissenschaftlicher Fortschritt durch Pathogenforschung ist vielversprechend und fruchtbar um zum Wohle der Menschheit beizutragen.
- Staatliche Kontrolle im biotechnologischen Bereich ist kostenintensiv, nutzlos, ineffizient und keinesfalls notwendig.
- Die Selbstkontrolle der WissenschaftlerInnen reicht als Vorsichtsmaßnahme aus.
- Eigene/zusätzliche Strafbestände zum herkömmlichen Strafrecht und juristische Sanktionsmittel sind nicht notwendig.

Option-Legislative: (Größtmögliche) Liberalisierung der Forschungsrichtlinien und Gesetzgebung im Pathogenforschungsbereich.

Option-Exekutive: Keine Kontrollen.

Option-Judikative: Keinerlei Sanktionen.
Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Szenario 2 Weitgehende Pathogenforschungsfreiheit, eingeschränkte Sicherheit:
Argumentation/Einschätzung: Pathogenforschung als Chance mir überschaubaren Risiken für die Menschheit: reglementierte Pathogenforschung mit großen Spielräumen:

- Zwar bietet Pathogenforschung großes Potential zum Wohle der Menschheit, nichtsdestotrotz gibt es auch ein nicht völlig zu vernachlässigendes Restrisiko.
- Grundlegende ethische Richtlinien und grundsätzliche verfahrenstechnische Richtlinien sollen vom Gesetzgeber im biotechnologischen Bereich vorgeschrieben werden, ohne jedoch Forschung zu behindern oder einzuschränken.

- ForscherInnen verfügen über das notwendige Know-How und über das notwendige Verantwortungsgefühl und treffen so die besten Entscheidungen im Sinne der Gesellschaft.
- Flächendeckende staatliche Kontrolle ist im biotechnologischen Bereich prinzipiell nicht notwendig, vereinzelte Stichproben reichen aus um allgemeine Sicherheit bzw. sorgsamen Umgang mit potentiellen Risiken zu gewährleisten. Kurze Rechenschaftsberichte seitens der ForscherInnen tun der Sicherheit genüge.
- Nichtbefolgung der allgemeinen ethischen Richtlinien oder allgemeinen verfahrenstechnischen Auflagen wird, wenn nachgewiesen, mit Verwaltungsstrafen hinlänglich sanktioniert.

Option-Legislative: *Grundsätzliche und allgemeine ethische und verfahrenstechnische Richtlinienvorgabe ohne den Forschungsbetrieb zu behindern*. Zusätzlich kann noch ein auf freiwilliger Basis zu befolgender Branchen-Kodex zur Sicherheit beitragen.

Option-Exekutive: *Vereinzelte Kontrollen und Rechenschaftsberichte schaffen genügend Sicherheit.*

Option-Judikative: Verwaltungsstrafen bei Verstößen.

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Szenario 3: Weitgehend gewährleistete Sicherheit, eingeschränkte Forschungsfreiheit:

Argumentation/Einschätzung: Pathogenforschung als Gefahr:
-Forschung im Pathogenbereich ist riskant und eröffnet zahlreiche gefährliche Möglichkeiten.

Die Folgen und mögliche Konsequenzen von Forschung im biotechnologischen Bereich Pathogene müssen deshalb jeweils fallspezifisch sowohl vom Staat als auch von den ForscherInnen bedacht werden.
- Sorgfältige Reglementierung ist notwendig, Reglementierungen greifen nur mit gleichzeitigen Kontrollen, da sie sonst in der Praxis als zahnlose Papiertiger gelten.

Option-Legislative: *Strenge Reglementierung durch den Gesetzgeber mithilfe fachlicher Beratung durch Experten (Praxisnähe) als Notwendigkeit*

Option-Exekutive: *Flächendeckende und strenge Kontrollen durch hochqualifiziertes Personal sind notwendig.*

Option-Judikative: *Verstöße werden schwer bestraft, hohe Geldstrafen der Unternehmen, Lizenzentzug, „Approbationsentzug".*

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Szenario 4, Völlige Sicherheit totales Forschungsverbot:

Argumentation, Einschätzung: Pathogenforschung als existentielle Bedrohung für die Menschheit:

- Die Forschung bezüglich Pathogenen findet in einem Hochrisikobereich statt und muss so weitgehend wie möglich – im besten Fall total – unterbunden werden, da diese Forschung eine unabschätzbare Gefahr für die Menschheit darstellt.
- Der mögliche gesellschaftliche Nutzen der Forschung im Pathogen-Bereich kann auch durch andere und weniger riskante Forschungsbereiche erzielt werden.
- Ein Verbot ist nur mit effizienten und weitreichenden Kontrollen durchsetzbar.

Option-Legislative: *Völliges Forschungsverbot in diesem Bereich.*

***Option*-Exekutive:** *Flächendeckende und strenge Kontrollen sind ständig notwendig.*

Option-Judikative: Verstöße werden nicht nur strafrechtlich verfolgt sondern auch schwer bestraft (mehrjährige Haftstrafen für alle Beteiligten, Existenz bedrohende Geldstrafen für beteiligte Unternehmen).

Szenario-Bewertung:

Kriterien	Szenario-Performance (0-10)	Minimum-Performance (0-10)	Maximum-Performance (0-10)

Faktoren (optional):	a,b,c

Szenario-Ranking
Die Szenarien werden geordnet, das attraktivste oder ansprechendste Szenario als Nr.1, etc.:

	Nr.1
	Nr.2

	Nr.3
	Nr.4
	Nr.5
	Nr.6
	Nr.7
	Nr.8
	Nr.9

Kriteriengewichtung
100 Punkte werden insgesamt vergeben, alle Kriterien die in der persönlichen Bewertung der Szenarios eingesetzt wurden, können dabei gewichtet werden.

Additionally presented criteria:

<u>Biometrics, possibly relevant criteria:</u>
(Möglicherweise relevante Kriterien für Biometrie:)

Realismus/Wahrscheinlichkeit der Vision, (realism and probability of the scenario)
Attraktivität des Szenarios (attractiveness of the scenario)

Institutionelle Sicherheit/“national security“(Kontrolle, Vorbeugen, Überwachen), (security, national security)

individuelle Sicherheit/“safety“ (Rechtssicherheit, Bürgerrechte), (safety)

Freiheit/Unfreiheit; Privatsphäre, Intimsphäre, Datenschutz, Flexibilität, Selbstverantwortung, (freedom/deprivation of liberties, privacy, private sphere, data security, flexibility, self-responsibility)

Gefahr, (danger)

Risiko, (risk)

Missbrauch, (abuse/misuse)

Kosten, (costs)

Komfort, (comfort)

Effizienz, (efficiency)

Transparenz, (transparency)

Arbeitsplätze, (jobs)

soziale Akzeptanz, (social acceptance)

soziale Gerechtigkeit, (social justice)

globale Gerechtigkeit, (global justce)

Lebensqualität, Wettbewerb, (life quality, competition)

Durchführbarkeit; Bürokratie, (feasibility; bureaucracy)
Volkswirtschaftlichkeit, (political economy)

Personenverkehr, (free movement of people)

Kundenorientiertheit des Staates, (customer-oriented administration)

Bürgernähe der Institutionen, etc. (citizen proximity of institutions)

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Dual Use Dilemma in Pathogen Research, possibly relevant criteria:
(Möglicherweise relevante Kriterien bez. Dual Use Dilemma in der Pathogenforschung:)

Attraktivität der Vision, (attractiveness of the scenario)

Missbrauchswahrscheinlichkeit, (probability of misuse/abuse)

Nationale Sicherheit (national security),

gesellschaftliche Risiken, (societal risks)

staatliche Schutzpflicht, (safety)

Forschungsfreiheit, Pressefreiheit, (freedom of research, freedom of press)

Meinungsfreiheit, (freedom of opinion)

Informationsfreiheit, (freedom of information)

Gesundheit, (health)

medizinischer Fortschritt, (medical progress)

Wohlstand, Effizienz, (wellfare, efficiency)

Wirtschaftlichkeit, (economy)

nationale Interessen, (national interests)

globale Gerechtigkeit, (global justice)

distributive/verteilende Gerechtigkeit, (social justice)

Kriegswahrscheinlichkeit, (probability of war)

Menschenwürde, (human dignity)

Recht auf Leben, (right to life)

Drogenkriminalitätsbekämpfung, (war on drugs)

Nahrungsmittelsicherheit, (food savety)

Vorsicht, (precaution)

Vorhersehbarkeit, (predictability)

geklärte Verantwortlichkeiten, (clear responibilities)

Catalogue of routing questions of the Problem-centred Interviews

Erinnerungen ans Parlament:
Wie war der **Ablauf?**
An was erinnerst du dich besonders?
An was erinnerst du dich bezüglich Chairs?
An was erinnerst du dich bezüglich des MCMs?
An was erinnerst du dich bezüglich der Expertenhearings?
Weißt du noch was welches **Szenario** du gewählt hast, welches Kriterium deiner Meinung nach besonders wichtig war?
An welche Szenarien erinnerst du dich?
An welche Kriterien erinnerst du dich?

An was erinnerst du die bezüglich eurer Resolution?
Wenn du dir die Resolution ansiehst, wo siehst du deiner Meinung nach deinen Input, welchen Punkten Formulierungen stimmst du nicht zu bzw. betrachtest sie als Kompromiss?
Bewertungen des Parlaments:
Was war gut, was war schlecht? Was hat dir gefallen, was war eher fad, anstrengend etc.
Persönlicher Nutzen: Gibt es etwas, was du deiner Meinung nach aus dem Parlament mitnehmen konntest? Was?
Was für einen Sinn hatte es deiner Meinung nach bzw. welche Ziele hatte das Jugendparlament?

Pathogene/Biometrie: Hattest du vorher schon eine Meinung dazu, hat sie sich verändert?
Hast du dir während des Parlaments eine Meinung bilden können?
Welche ist das?

Kam die von euch entwickelte Resolution deiner Meinung nach demokratisch zusammen? Hatte jeder Gelegenheit sich einzubringen?
Hat sich jeder eingebracht? Warum glaubst du haben sich manche weniger eingebracht?

Hast du dich bei der Findung einer gemeinsamen Sichtweise zu dem Thema genügend eingebunden gefühlt?

Hast du gewisse Dinge/Vorbehalte nicht argumentiert, da andere anderer Ansicht waren?
Oder hast du ein mit der Sache verbundenes Unbehagen nicht geäußert, da es dir nicht rational genug erschien?

Wolltest du dich mit deiner Meinung nicht zu sehr exponieren?
Wie denkst du hat die Gruppe deinen Input beeinflusst?
Wie denkst du hat die Gruppenzusammensetzung die Diskussion beeinflusst?

Wie hat die Gruppendynamik deine Meinung bzw. deine Bereitschaft mitzuarbeiten beeinflusst?

Hast du deiner Erinnerung nach vernünftig klingenden Argumenten zugestimmt, obwohl du ein Unbehagen diesen gegenüber gespürt hat?

Hast du dich von deinen Kollegen oder dem Chair beeinflusst gefühlt?

Ist die Resolution für dich eher ein durch Diskussion erzielter breiter Konsens oder siehst du sie es als Kompromiss, der verschiedenen Faktoren geschuldet ist? Warum bzw. welchen?

Was könnte man deiner Meinung nach am „Science Parliament" verbessern? Was müsste man verbessern, um Menschen zu motivieren daran teilzunehmen?

Explikation der Kriterien Biometrie:
Sicherheit:
Was bedeutet **Sicherheit** für dich? Wie würdest du es erklären/definieren?
Sicherheit wovor? Welche Bedrohungen?
Fühlst du dich sicher? Wo/inwiefern fühlst du dich unsicher? Würdest dich unsicher fühlen?
Wo denkst du dass es Sicherheitsprobleme gibt?

Welchem Prinzip sollte Sicherheit deiner Meinung nach gehorchen?
Bsp.: Größtmögliche Vorsicht, Größtmöglicher Nutzen, Größter Nutzen nach Wahrscheinlichkeit, größter Schaden nach Wahrscheinlichkeit?

Im Bsp.: Biometrie als Sicherheits- und Überwachungstechnik:

Was bedeutet Sicherheit hier, wie würdest du es erklären?

Sicherheit vor? (Kriminellen, Terroristen, Polizei, Staat, Konzernen, Arbeitgebern)

Wird die Welt durch Technologien wie Biometrie immer sicherer?
Kann unser Leben durch Biometrie auch unsicherer werden, inwiefern?
Muss die Welt immer sicherer werden?
Inwiefern wird die Welt unsicherer? Welches sind die gefährlichsten Bedrohungen?

Welchem Prinzip sollte Sicherheit deiner Meinung nach gehorchen?
Größtmögliche Vorsicht, Größtmöglicher Nutzen, Größter Nutzen nach Wahrscheinlichkeit, größter Schaden nach Wahrscheinlichkeit?

Privatsphäre:
Was bedeutet Privatsphäre für dich?

Wo würdest du die Grenze ziehen bezüglich dich betreffende Informationen die für niemanden verfügbar sein sollten? (Meinung/Einstellung zu Politik/Sexualität/Familie/Freunde, Daten über Lebensablauf -

Bewegungsmusterdaten(wann du wo bist), Kommunikationsdaten (wann du mit wem kommunizierst),
Wo würdest du Vorrichtungen Überwachung durch Identifikation nicht akzeptieren (müssen): Schule, Verkehrsmittel, Kino, Theater, öffentliche Plätze (Rathauspark), Geschäfte, Arbeitsplatz, Toiletten, Pausenräume, etc.

Muss Privatsphäre sichergestellt werden?
Wer bedroht Privatsphäre (Staat, Wirtschaft, wir selbst, etc.)?
Wie soll kann Privatsphäre geschützt werden?

Freiheit:

Was bedeutet Freiheit für dich, was verstehst du darunter? Wie würdest du es erklären?
Muss Freiheit sichergestellt werden? Warum/wo
Wie kann Freiheit sichergestellt werden?
Wer oder was bedroht/gefährdet deine Freiheit?
Was bedeutet Freiheit in Bezug auf Biometrie

Gerechtigkeit:
Was bedeutet Gerechtigkeit für dich? Was verstehst du darunter?
Was bedeutet Gleichberechtigung für dich?
Was bedeutet soziale Gerechtigkeit für dich?
Chancengleichheit (jeder hat ähnliche Chancen Allmögliches zu erreichen) oder Ergebnisgleichheit (jeder hat am ende ein relativ ähnliches Einkommen, einen relativ ähnlichen Lebensstandard)

Bedarfsprinzip (Bsp.:Armut), Leistungsprinzip, Besitzstandsprinzip (Bsp.: Erbschaften), Beitragsprinzip (jeder soll soviel beitragen, wie er kann), Nutzerprinzip (zahlen für das was man in Anspruch nimmt)

Zeitersparnis im Bezug auf Biometrie:
Bedeutet für dich?
Bedeutet Effizienz?
Warum glaubst du die Zeitersparnis/Effizienz kommt deiner Freizeit zugute?

Komfort:
Was bedeutet Komfort in Bezug auf Biometrie? Wie komfortabel stellst du dir deine Biometrische Zukunft vor?

Schnelllebigkeit
Was bedeutet Schnelllebigkeit für dich? Wie würdest du es erklären?
Ist es was Wünschenswertes?
Wie kann man Schnelllebigkeit verhindern?
Lebensqualität:
Was bedeutet für dich Lebensqualität?
Was bedeutet für dich Lebensqualität in Bezug auf Biometrie, wie beeinflusst diese deine Lebensqualität möglicherweise?

Kriterium Risiko bei biometrischen Szenarien:
Was genau verstehst, meinst du unter/mit diesem Kriterium?

Kriterium Gefahr bei biometrischen Szenarien:
Was genau verstehst du unter diesem Kriterium?

Psychische Belastung für Menschen durch allgegenwärtige Biometrie als Kriterium in Diskussion und Resolution, aber nicht beim MCM, warum?

Explikation der Kriterien Pathogenforschung:

Was bedeutet **Sicherheit** für dich? Wie würdest du es erklären/definieren?

Sicherheit wovor?

Fühlst du dich sicher? Wo/inwiefern fühlst du dich unsicher? Würdest dich unsicher fühlen?

Wo denkst du dass es Sicherheitsprobleme gibt?

Welchem Prinzip sollte Sicherheit deiner Meinung nach gehorchen?
Größtmögliche Vorsicht, Größtmöglicher Nutzen, Größter Nutzen nach Wahrscheinlichkeit, größter Schaden nach Wahrscheinlichkeit?

Was bedeutet Sicherheit in dem Bsp.: DUD I Pathogen Research:

Wie würdest du es hier erklären definieren?
Sicherheit wovor/Bedrohungen (Epidemien natürlichen Ursprungs, aus dem Labor, vor anderen Staaten, Konzernen, verrückten Wissenschaftlern, Terroristen etc.)?
Wird die Welt durch Pathogenforschung sicherer oder unsicherer, warum?

Welchem Prinzip sollte Sicherheit deiner Meinung nach gehorchen?
Größtmögliche Vorsicht, Größtmöglicher Nutzen, Größter Nutzen nach Wahrscheinlichkeit, größter Schaden nach Wahrscheinlichkeit?

Recht auf Leben:
Wie würdest du Recht auf Leben erklären/verstehen? Was bedeutet es deines Ermessens?
Wie hängt das Recht auf Leben mit Pathogenforschung zusammen?
Wer hat dieses Recht? Wo fängt Leben an?
Wem gegenüber muss dieses Recht verteidigt werden?
Ist das Recht auf Leben auch eine Pflicht zu Leben?

Freiheit der Forschung:
Was heißt Freiheit der Forschung?
Welchen Nutzen hat diese?
Kannst du dir vorstellen warum es diese gibt?
Ist diese gefährdet? Wo muss diese beschützt werden?

Gerechtigkeit:
Was bedeutet Gerechtigkeit für dich?
Was bedeutet Gleichberechtigung für dich?
Was bedeutet soziale Gerechtigkeit für dich?
Chancengleichheit (jeder hat ähnliche Chancen Allmögliches zu erreichen) oder Ergebnisgleichheit (jeder hat am ende ein relativ ähnliches Einkommen, einen relativ ähnlichen Lebensstandard)
Bedarfsprinzip (Bsp.:Armut), Leistungsprinzip, Besitzstandsprinzip (Bsp.: Erbschaften), Beitragsprinzip (jeder soll soviel beitragen, wie er kann), Nutzerprinzip (zahlen für das was man in Anspruch nimmt)

Was bedeutet Gerechtigkeit in Bezug auf Pathogenforschung?

Wissen
Was verstehst du unter Wissen?
Welche Funktion hat Wissen?
Was bedeutet der Wert Wissen für diech im Kontext Pathogenforschung?
Wann ist Wissen wünschenswert, welchen Nutzen hat es?
Kann Wissen gefährlich sein? Wann ist es gefährlich?

Fortschritt:
Was bedeutet Fortschritt für dich?
Was bringt technologischer Fortschritt mit sich?
Kommt Fortschritt nicht automatisch/sowieso?
Gibt es moralischen oder ethischen Fortschritt der Menschheit?
Ist Fortschritt Mittel oder Zweck? Mittel zu was?

Wie hängt Fortschritt und Pathogenforschung zusammen? Wie hängt Fortschritt und Wissen zusammen?