



The IMAGINE EBD deck – how to use it?

The main objectives of the IMAGINE EBD¹ deck are to engage Ethics By Design (EBD) practitioners, both developers and ethicists, in reflections on

- (1) their own responsibility as technology researchers and developers with regard to society
- (2) the respective roles of ethicists and developers in the concrete practice of shaping ethical IT.

The discussion unfolds in two distinct rounds of debate, each corresponding to one of these objectives. Each round is supported by a dedicated set of 15 cards: Statement Cards and Practice Cards. Each participant is provided with these two decks of cards. A typical discussion workshop lasts about 2 hours, accommodating between 5 and 10 participants. The workshop is ideally led by a facilitator, steering the sequence of the various steps, ensuring everyone is involved in the discussion, and keeping track of the time. Additional background information is available in a research paper written by IMAGINE RRI developers Felt, Fochler and Sigl².

In each round participants are asked to select cards along rules specified by the facilitator. The choices in the respective rounds are independent, meaning that choices in the second round do not need to refer to those in the first one. As a general principle, the cards allow the participants to choose issues that either strongly resonate with their own opinion and practice, or that they disagree with.

After an introductory round of the participants the facilitator briefly explains the basic logic and purpose of the game. Then, approx. 40 minutes are devoted to each round. A break of roughly 10 minutes is recommended between the two rounds.

Round 1: Statement Cards

In the first round, the facilitator asks the participants to read the twelve statement cards and to choose one card they most strongly agree with and a second card they most strongly disagree with. The facilitator also reminds the participants of the possibility to use blank cards for personal statements.

The texts on the cards describe positions on the responsibilities of researchers in relation to society. The development of these cards is based on an analysis of existing writings on responsibility in research or analyses of how responsibility is perceived in practices (Felt 2017). *Statement Card A* in Figure 1 for example is inspired by a quote of a popular author (C.P. Snow), other cards relate to how issues of responsibility are addressed in current policy debates (e.g. in terms of grand challenges or

¹ Our IMAGINE EBD tool draws significant inspiration from the IMAGINE RRI method created by Ulrike Felt, Maximilian Fochler and Lisa Sigl within the context of Life Science Research. This method is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (<https://creativecommons.org/licenses/by-nc-sa/4.0/>).

² Felt, U. et al. (2018) IMAGE RRI. A card-based method for reflecting on responsibility in life science research. *Journal of Responsible Innovation* 5 (2): 201-224.

market relevance in the framework program Horizon 2020 of the European Commission), while others are rephrased narratives of researchers (derived from previous discussion formats). Every card features a headline which participants can also use as a shorthand to refer to the card in the discussion. The text starts with a one-sentence statement in bold which describes a normative position about what a responsible researcher is, does or should do. The remaining text elaborates this initial statement in less than forty words.



Figure 1 - Example of a Statement Card

The phrasing “a responsible researcher is ...” at the beginning of each card is chosen to invite an immediate personal identification with, or distancing from the statement. This avoids too abstract interpretations and encourages researchers to position themselves in relation to the identities and normative positions sketched on the cards. This is further supported by the way in which the subsequent text is written. In *Statement Card A*, for example, the first statement is about anticipation as a dimension of responsibility in research. The text however represents only one of many possible interpretations of the general statement in bold, and it does not develop it in a fully stringent logical interpretation. This consciously opens up room for participants to critically engage with the text and maybe agree with a part of the statement, but disagree with other parts.

Round 2: Practice Cards

The second round revolves around expectations as well as experiences Ethics by Design practitioners may have about the integration of ethics in software development practice. The participants are again asked to read through and pick two out of the twelve *Practice Cards* (or write a card of their own) that they consider most pertinent for discussion. Similar to the first round, one of their choices should be a quote they resonate with, while the other should be one they disagree with.

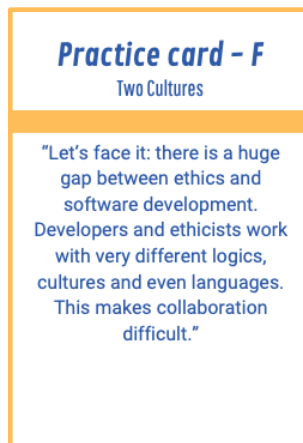


Figure 2 - Example of a Practice Card

The *Practice Cards* consist of a headline that names a specific expectation or experience, and a text (approx. 40 words) that is formulated as a direct quote from a researcher. The choice of expectations and experiences is mainly informed by our research findings as well as previous studies of the game developers on the integration of Social Science perspectives in R&D contexts: the quotes are either taken from actual interviews, semi-fictional (re-phrased quotes by R&D actors), or fictional (from our observations). The *Practice Cards* cover issues including the perceived legitimacy of ethics and social science perspectives in the context of technology design, the cultural divide between both research domains, as well as perceptions of a critical anti-technology stance within the social sciences (see Figure 2).

The quotes are written from the perspective of ethicists as well as developers. The narrative form of the direct quote is chosen deliberately. It lends authenticity to the argument, aiming to allow researchers to relate to the topic and potentially recognize its relevance to their personal situation. The relation of the expectations and experiences on the cards to responsible research practice stays mostly implicit on the cards, which requires researchers to build their own argument. Again, as with the statement cards, the sentences on the card may make several related points, so participants may agree with parts of the card and disagree with others.

Role of the facilitator and phases of the debate

Both rounds start with the facilitator introducing the specific objective of the discussion phase and participants reading and choosing cards. In our experience, this takes ten minutes on average. After all participants have made their choice, the facilitator asks participants to explain their card choices in relation to their own experiences and practices. Every participant has the equal opportunity to briefly define her or his position, by describing why they chose the specific cards and then giving a rationale of how it relates to their experiences. In doing so, participants build on the narrative infrastructure provided by the cards, but they add narrative elements of their own; for example, in explaining why they cannot be neutral with respect to the potential use of a specific technology they are developing (cfr. Figure 1 - Statement Card A) or why they are reluctant to collaborate with ethicists (cfr. Figure 2 - Expectation Card E).

After this first phase, the facilitator asks the participants to comment on the choices the others made and asks which choices they were surprised by. This usually triggers different forms of productive exchanges and deliberation on normative issues at stake. Participants may support others' choices, for example stressing that they had also considered a specific card but then prioritized another. They may question other participants' interpretations and explain how it differs from their own initial reading.

Or they may challenge another participant's position and the importance of the card they have chosen. In our experience, the ability of participants to relate their positions to the narratives on the cards allows for quite critical yet constructive debates. Participants feel that the presence of cards relating with their position gives it a certain baseline legitimacy, which, in turn, allows them to take criticism less personally than they might in non-card-supported discussions.

During the debate, the facilitator aims at maintaining a good balance between keeping rules and timelines and allowing flexibility in the discussion. This enables participants to appropriate the game and handle the cards in creative ways: repeatedly, they would for example choose not two cards but several different cards to explain their positions or use a single card to demonstrate different kinds of positions. Further, they would refer to other than their chosen cards in the course of the debate to support their arguments. Thus, their creative ways of handling the cards support them in voicing a variety of positions – even when they were not explicitly mentioned on the cards.

Often, during these first two phases the facilitator does not actively intervene by asking questions, but merely makes sure that all participants get their turn to speak. Other than that, the dynamics of the discussion emerge from the participants' choices and reactions. If there is time left however after the general debate, the facilitator may ask focused questions; e.g. by inquiring further into implicit tensions in the debate, or by addressing cards that have not been mentioned at all and asking why they were not considered. This often motivates researchers to speak about why certain aspects of responsibility are considered less important in the particular research field, and may even lead them to discuss why certain topics are handled as taboo.

The discussion closes with a brief round of statements on how the participants experienced the game.

Number of participants

The ideal number of participants for such a card-facilitated discussion method is between five and eight. Less than five may impede the discussion dynamics, also because fewer cards are selected overall and hence may serve as points of reference in the discussion. With more than eight participants, there is too little interaction time per participant, and the rounds in which participants present their cards are too long and may seem repetitive.

Ethics by Design

Whose responsibility?

SIMPORT

Statement card - A

Applications




A responsible researcher thinks about their research in relation to possible applications.

Researchers have to be neutral in their search for the truth, but cannot be neutral as to the use of that truth once found. If you know more than other people, you have more responsibility, rather than less.

Statement card - B

Only science



A responsible researcher focuses on doing their research very well and doesn't care about much else.

Researchers should only follow their scientific curiosity. They are not responsible for the laws of nature, only to find out how they operate. It is not possible to anticipate how people will apply them later on.

Statement card - C

Give back to society

A responsible researcher has to respect the fact that they are a publicly funded figure.

Employed by the university or research funds, researchers need to be transparent on how the money is spent. It's give and take: you receive from society, and in return you give something back that benefits society.

Statement card - D

Citizen

A responsible researcher is a citizen like everybody else.

And – just like everybody else – researchers are responsible to society for what they are doing.

Scientists, therefore, are responsible for their research, not only intellectually but also morally.

Statement card - E

Economic value

A responsible researcher has a responsibility towards society to produce something useful.

In particular, researchers should try to do something that has economic value or that creates jobs, transfers knowledge to industry, or creates a start-up or patent so that it is accessible for users.

Statement card - F

Knowledge base

A responsible researcher is basically what every proper researcher is anyway. They all want to do something good for society. Researchers are responsible to enlarge the knowledge base of humanity to solve societal problems. Every research can benefit society in the long run.

Statement card - G

Public intellectual




A responsible researcher should be a public intellectual and engage in public debates around their research topics.

Research shapes our societies and scientists have the responsibility to provide guidance in developing a worldview that fits our techno-scientific societies.

Statement card - H

Global challenges



A responsible researcher is motivated by the great challenges of humanity: climate change, the energy transition, inequality, etc. We will need all intellectual resources to overcome these global problems. They should be the driving force of research and guide the choice of research questions.


Statement card - 1

System

A responsible researcher is just one element of the whole research and innovation system. Individual researchers cannot do much. The whole system – policies, funding mechanisms, universities, industry – should be organised to care for our future. We basically just do what the system expects us to do.

Statement card - J


Interaction



A responsible researcher interacts with people outside academia – be it big industry, smaller companies, governmental actors, as well as citizens. This exchange is necessary to find out about societal problems and to contribute to solutions for them.

Statement card - K


Diligence



A responsible researcher conducts their research very diligently. This is the only real responsibility of researchers: to follow the rules of scientific and engineering work and keep good records of the research process. This ensures objective results that can be repeated and verified by other researchers.

Statement card - L

Diversity



A responsible researcher should consider gender issues, and diversity in general. It is important to include a diversity of perspectives in the research process. You may not notice right away, but research quality benefits from diversity. This research will be better equipped to serve society.

Statement card - M



A responsible researcher...

Practice card - A

Proximity



“Deep integration of ethics and software development thrives on close collaboration, including the informal chat at the coffee machine. It takes time to develop mutual trust and a shared language.”

Practice card - B

Narrow-mindedness

“Developers have a natural focus on bringing out some successful application. It would have a major impact if ethicists could break this narrow-mindedness in a convincing way that can be grasped by developers.”

Practice card - C

Context Switch

“Ethical considerations are a big context switch for developers, who are all the time thinking about functionality.

Ethicists should be as constructive as possible and catch developers in the process, with empathy.”

Practice card - D

Knowledge Gap

“When an ethicist encounters a technical aspect they don’t understand, they seek clarification from a technical expert. However, if an ethical argument becomes too complex for the technical expert, the ethicist is sometimes dismissed for relying on vague concepts.”

Practice card - E


Critical



"Ethics and social sciences often adopt a critical perspective toward innovation, focusing on potential problems. In the absence of objective studies, this critical stance can slow down the innovation process and do a lot of damage."

Practice card - F


Two Cultures



“Let’s face it: there is a huge gap between ethics and software development. Developers and ethicists work with very different logics, cultures and even languages. This makes collaboration difficult.”

Practice card - G


Ethics Chatter



“Ethics and social sciences are an unstructured, and therefore an unreliable body of knowledge. While broad conversations about ethical aspects of IT are interesting, they do not offer anything concrete to software development practice.”

Practice card - H

Affect



“Collaboration between ethicists and developers is affectively challenging. Sometimes you feel stupid or annoyed because you have no idea what the other person is saying, or ashamed because the other person makes you feel like you're selling nonsense.”

Practice card - I

Division of Labor



“Integration of ethics in technology development is often framed through a patriarchal and gendered lens. Technical work is considered as the ‘real’, ‘hard’ work, while ethical responsibilities are talked about in ‘soft’ terms of taking care of secondary social aspects of technological breakthroughs.”

Practice card - J

Education

“Ethical considerations hardly play a role in the curricula of software engineers. As a developer, one is well educated to carry out technicalities, perhaps one also received a course on business management or law. However, you do not learn how to reflect on your work and how it relates to overall societal questions.”

Practice card - K

Organisational Practice

“No matter what form the lurching, fractional changes the software development world takes towards ethical technology, they will only be sustained if they become embedded in organisational practices and project management approaches.”

Practice card - L

Motivation

“Ethics principles and tools may help, but in the end, it is maybe the motivation of the developer that counts. How motivated are they in order to achieve ethical results? Are they eager to see the bigger picture?”

Practice card - M



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