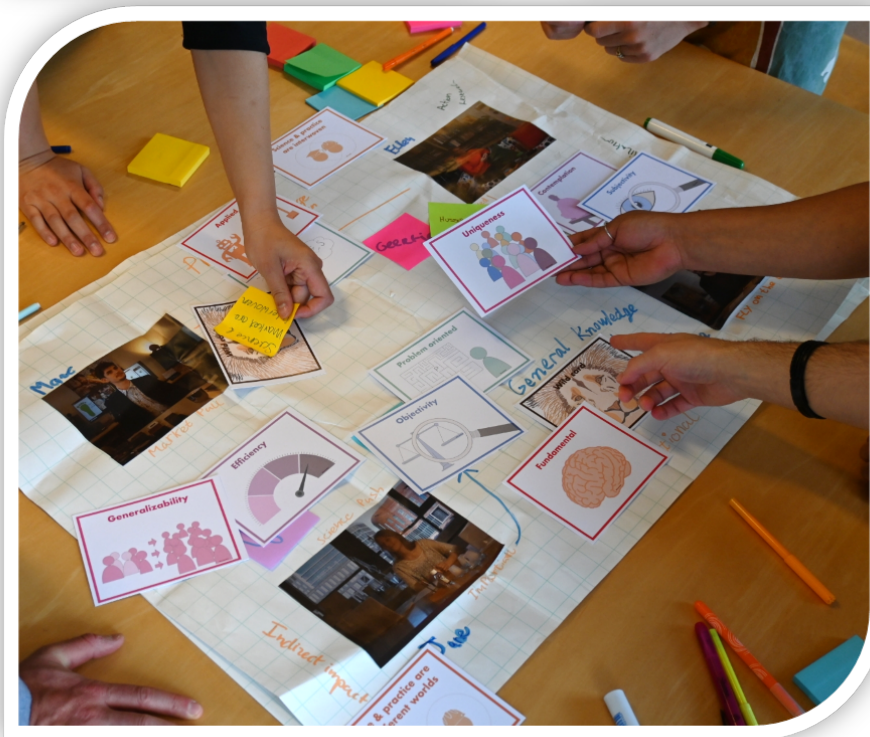# Workshop Manual for Frame Reflection Lab: Views of Science

A. Horn & M.G. van der Meij, October 2023

This manual provides the instructions for implementing a Frame Reflection Lab process in your own practice of working with inter- and transdisciplinary teams in research or education.

For the scientific research into this tool and the reporting on findings in implementing FRL to support the development of interdisciplinary consciousness, see our article:

Horn, A., van der Meij, M. G., Willems, W. L., Kupper, F., & Zweekhorst, M. B. (2022). Developing interdisciplinary consciousness for sustainability: using playful frame reflection to challenge disciplinary bias. Sustainability: Science, Practice and Policy, 18(1), 515-530. https://doi.org/10.1080/15487733.2022.2095780

Why Frame Reflection Lab?

In inter- and transdisciplinary teamwork, collaborators are likely to stumble upon collaboration-related tensions that often root in their underlying ideas of *"what is good scientific research?"*. These differences in so-called epistemic cultures often have an origin in the traditions that they were educated (and subsequently acculturated) in. In inter- or transdisciplinary teamwork, therefore, it is useful to reflect upon epistemic cultures. The Frame Reflection Lab tool provides a creative method for such reflection[1].

What is Frame Reflection Lab?

FRL2 takes inter- and transdisciplinary teams along a journey across different epistemic cultures, with three video-clips in which four improvisation actors talk about 'their climate change research'. Note that their research is fictitious.

The video-clips take viewers along a reflection journey in three steps by means of the following three questions:
- Video 1: What is your climate change research about? For first order reflection on how research into a complex topic can be conducted.
- Video 2: What do you consider as good scientific knowledge? For second order reflection on what values and assumptions are important in conducting scientific research, such as objectivity versus subjectivity, and observing phenomena versus intervening in society.
- Video 3: How should scientific knowledge be produced to impact society? For first order reflection on different approaches to collaborating within science and beyond.

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[1] It builds on a previous Frame Reflection Lab tool developed in Athena Institute, which was a method for reflection on the field synthetic biology for future researchers. Previous research into this method showed that the FRL method supports people in deepening their own viewpoints and developing openness for other viewpoints. See also:
- van der Meij, M. G., Heltzel, A. A. L. M., Broerse, J. E. W., & Kupper, F. (2018). Frame Reflection Lab: a Playful Method for Frame Reflection on Synthetic Biology. *NanoEthics*, *12*(2), 155-172. https://doi.org/10.1007/s11569-018-0318-9
- van der Meij, M. G., Kupper, F., & Broerse, J. E. W. (2017). Supporting citizens in reflection on synthetic biology by means of video- narratives. *Science Communication*, *96*(6), 713-744. https://doi.org/10.1177/1075547017730585

Although the research topic is climate change in the video-clips, they can be used for teamwork on any kind of topic. The way the improvisation actors talk about research is universal, the epistemic cultures co-exist in any field.

What materials do you need to apply FRL2.0 in your own practice?

For a physical FRL session the following materials are needed:
- This manual
- The [video-clips](#)
- Photos of the four actors (see appendix)
- A set of cards about 'values and assumptions' for step 3 (see appendix)
- A set of cards for 'knowledge strategies' for step 4 (see appendix)
- A white canvas A1 or A0 size
- Post-its
- Markers or pencils.

For an online FRL session, a digital workspace - such as Mural - can replace the canvas, post-its, photos and cards.

The printable materials (character cards, value & assumption cards, and knowledge strategy cards), links to the videos, and a Mural template can be found here:
https://vu.nl/en/employee/toolbox-for-stakeholder-engagement/frame-reflection-tool-for-inter-and-transdisciplinarity

FRL workshop set-up

The FRL can be applied in a process that runs over a longer period of time (for example for the length of a course), but also in a workshop format. This manual focuses on the latter. In our experience, running the FRL workshop takes 90 to 120 minutes, depending on the level of experience, group sizes, the desired depth of conversations and format possibilities (online/offline). Ideally you run the workshop with groups of between 4 and 6 people; in the case of a bigger group (e.g. a department or cohort of students), best is to divide them in smaller groups of 4 to 6.

Step 1: Positioning
- Show [video 1](#) to the workshop participants.
- Ask them to:
  - Put the four photos of Marc, Ellen, Jane and Anthony on the canvas.
  - Each place a post-it with their name somewhere on the canvas, on a location relative to the four characters that they think best fits.
  - Explain to each other why they positioned themselves as they did.

Step 2: Differences & Similarities
- Show video 2 to the workshop participants.
- Ask them to:
    - Discuss with one another what the characteristics of their viewpoints are, based on what they have heard in the first two videos.
    - Make notes of your discussion on post-its. Where possible or needed, draw arrows between the photos to highlight differences or similarities in viewpoints.
- Facilitate a short plenary discussion about their major discoveries and experiences.

Step 3: Value Cards
- Ask the participants to:
    - Collectively place the values and assumptions cards with or between the different characters / photos based on what they have heard in video-clips 1 and 2 (besides the value and assumption cards there are also 4 'Wild Cards' which can be used for any values or assumptions that participants would like to add or replace to the cards provided).
    - Reconsider their initial positioning; with the new insights into the views of the characters, and the underlying value systems, would they still position themselves as they did?
- Facilitate a short plenary discussion about their major discoveries.

Step 4: Knowledge Strategies
- Let workshop participants see and listen to video 3.
- Ask them to:
    - Collectively, through consensus oriented conversation, place the knowledge strategy cards with or between the different characters / photos based on what they have heard in video-clip 3.
    - Consider whether after all they have learned during the workshop, and the new insights and views they have acquired, like to revise the positioning that they took at the beginning of the workshop.

Step 5: Wrap-up
- Ask participants about their experiences and insights.
- Emphasize that:
    - All viewpoints co-exist in science, in every project and in society, and carry a high value in them for different contexts.
    - For the context of multi-level, complex, multi-actor project collaboration, however, it can be useful to adopt the stance of Ellen regarding collaboration: you need to address (underlying) tensions in order to deal with them and step over them and realize beautiful project outcomes.

Some tips

Based on our experiences with implementing the FRL tool with more than 250 participants, we have a few tips to take into consideration when implementing the tool in your own context:

● *Facilitation*: We found that facilitation of the discussions helps deepen and enrich them. We recommend facilitators to sit at the table of a group or walk around between groups and pose follow-up questions to spark further reflection, and encourage participants to constructively question each other. When running the workshop with multiple groups in parallel, consider having multiple facilitators.

● *Embedding*: In order to really bring home the lessons from the Frame Reflection Lab tool, we recommend that the workshop should not be a one-off engagement with the topic. Rather, we recommend engaging with the topic and the terminology from the tool throughout the collaborative context in which the tool is used. For instance, by engaging in individual reflections leading up to and/or after the workshop and by referring back to the workshop and its lessons when challenges in teamwork occur. This asks for embedding of the workshop in the collaboration. Examples of reflection questions and exercises that can be used in complement to the Frame Reflection Lab workshop can be found here: https://vu.nl/en/employee/toolbox-for-stakeholder-engagement/frame-reflection-tool-for-inter-and-transdisciplinarity

● *Tailoring*: to use the FRL tool to contribute to learning goals and needs in different contexts, we urge users to tailor the way it is implemented to the context in which they apply it. For instance, we have also implemented the tool with group reflections spread out over different sessions, rather than as a single workshop, when that better fitted our goals and planning. In another context we dealt with a group of individual who were much in transition from one view of science to another and reflecting on this transition was an important learning goal for us. Therefore, we slightly adapted the group discussion format to let the participants position themselves three times (their past, current, and aspired future position) rather than one.

● *Safety*: Emphasize, at the beginning of the workshop and continuously while running it, that there are no right and wrong answers or stupid questions. It is important to nurture a safe atmosphere that is inviting to share and interact. Specifically in relation to repositioning, stress that this does not mean "admitting being wrong", but rather having acquired a new view on the matter. We saw that participants were not always inclined to reposition themselves.

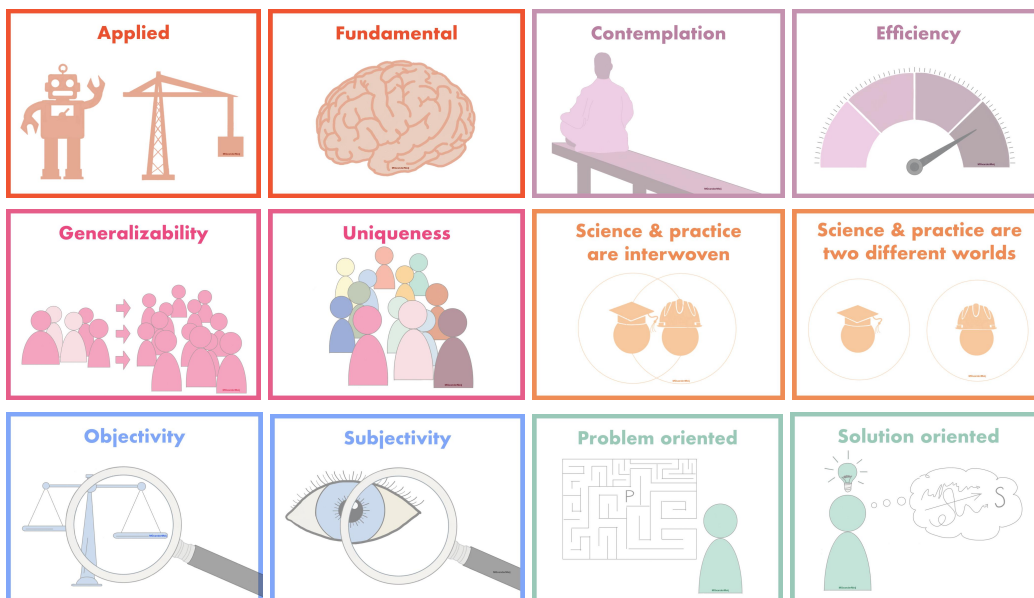**Appendix: Overview of printable workshop materials**
The materials are also provided as printable pdf on the website:
https://vu.nl/en/employee/toolbox-for-stakeholder-engagement/frame-reflection
-tool-for-inter-and-transdisciplinarity

Four character pictures (used in step 1):

Twelve value & assumption cards (used in step 3):

Appendix: Overview of printable workshop materials (continued)

Four wildcards (used in step 3):

Four knowledge strategy cards (used in step 4):