

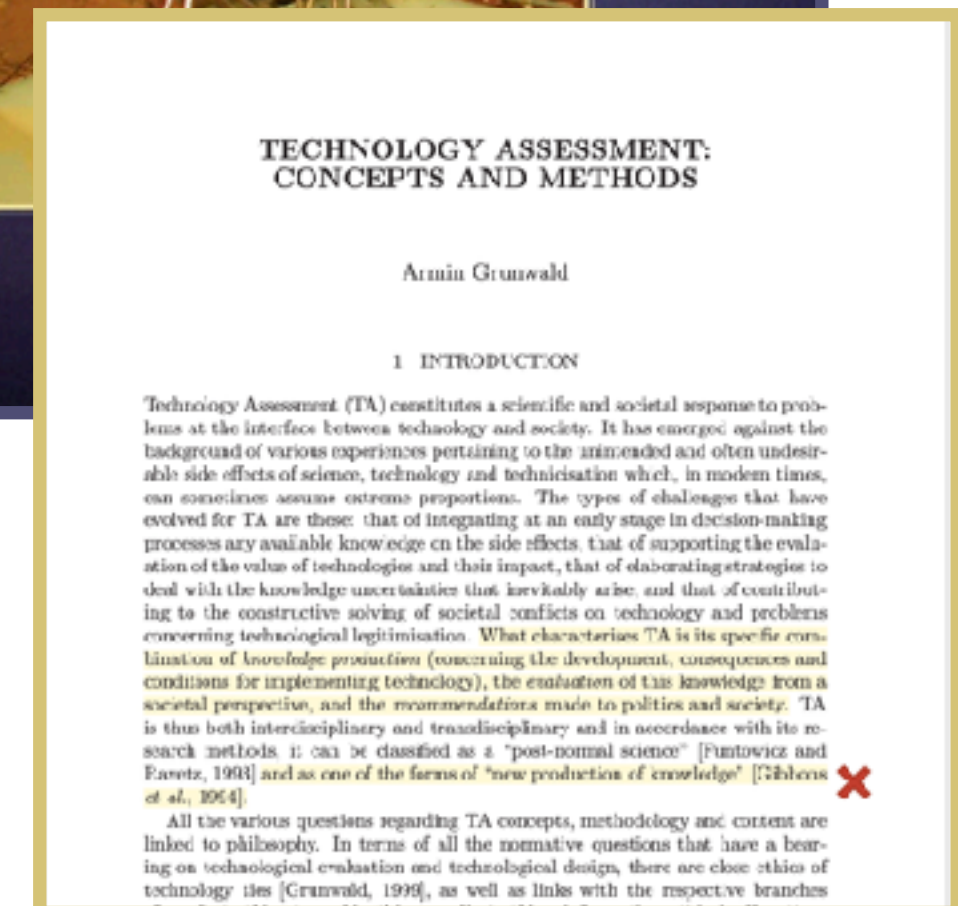
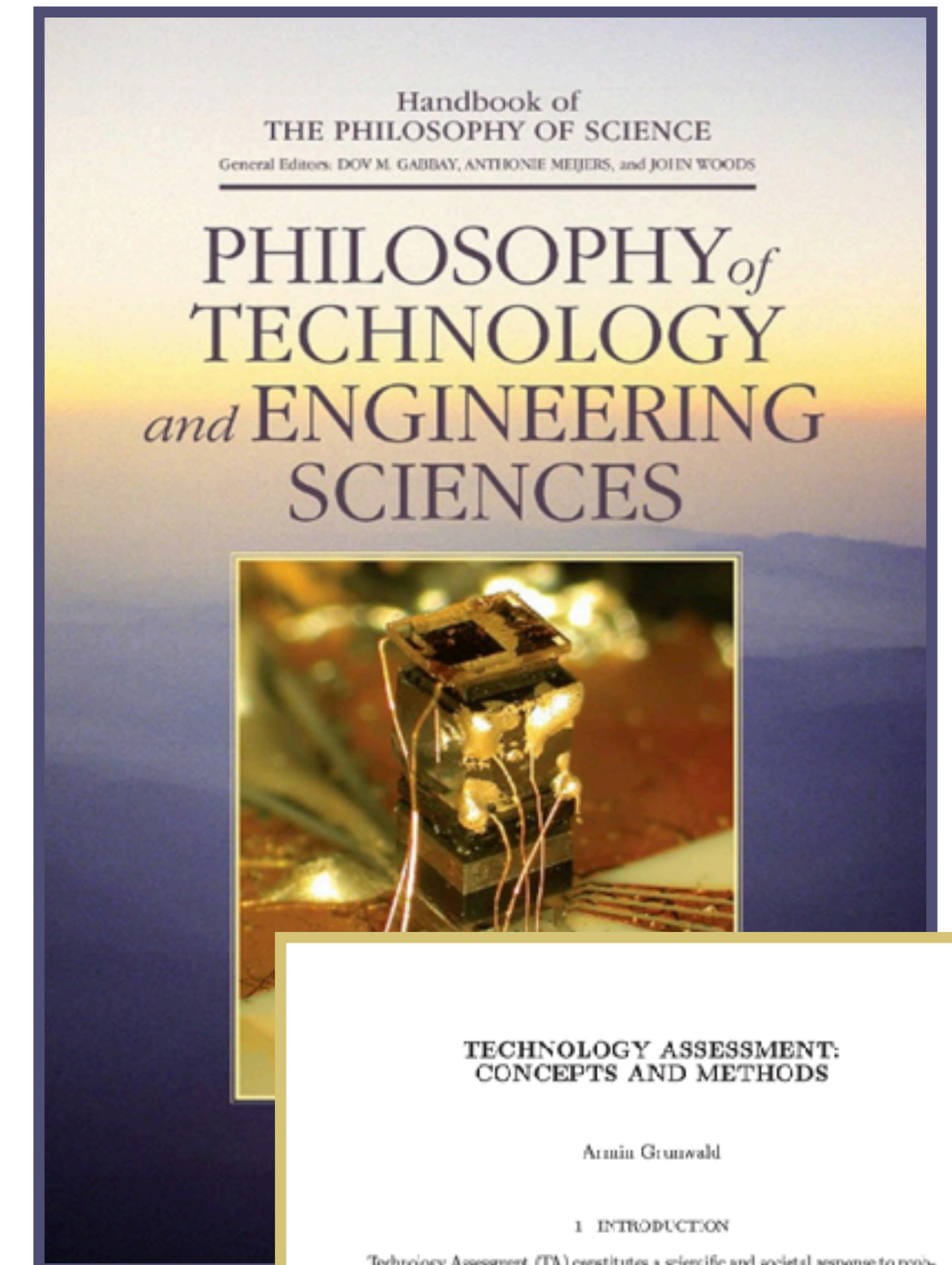


# Agenda

- ▶ What is Technology Assessment?
- ▶ GenKI & TA Meetings
- ▶ Three examples from my own practice
- ▶ Conclusion and take aways

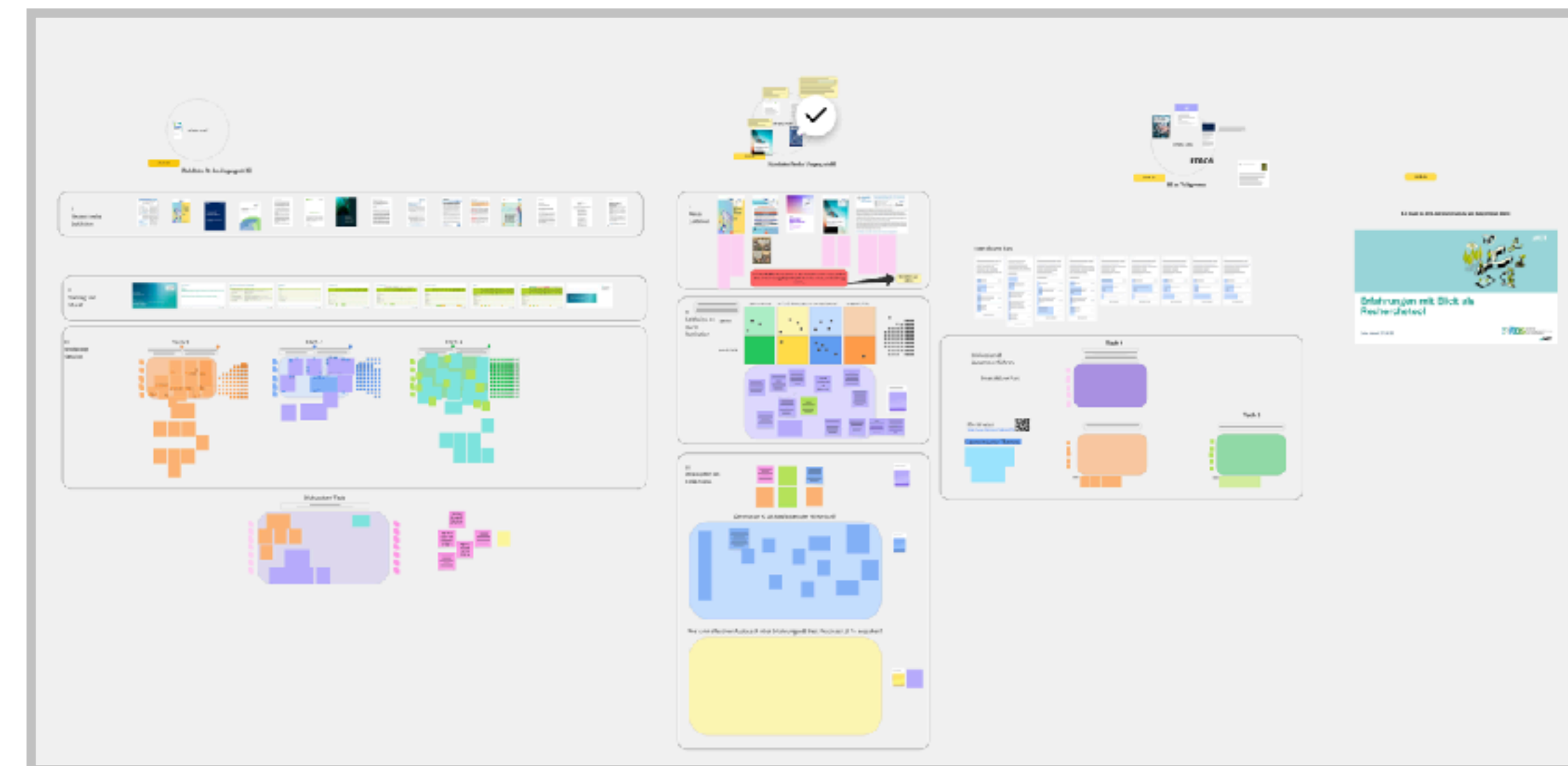
# What is Technology Assessment?

- ▶ **Definition & purpose:** Scientific, interactive, and communicative process that informs public and political opinion on the societal dimensions of NEST.
- ▶ **Five societal challenges:**
  - ▶ the expanding reach of science and technology into all spheres of life;
  - ▶ precaution under deep uncertainty;
  - ▶ the ethical dimensions of technical progress;
  - ▶ conflicts and legitimization problems around contested technologies;
  - ▶ Economic difficulties and prerequisites for innovation.
- ▶ **Defining characteristics:**
  - ▶ orientation toward ex-ante decision support, value-relatedness,
  - ▶ systemic and interdisciplinary/transdisciplinary and participatory approach.
- ▶ **Role & boundary:**
  - ▶ TA advises rather than decides.
  - ▶ Focus on side effects might cause bias



# GenKI & TA Meetings

- ▶ Series of meetings in 2025
- ▶ Discussions about different approaches, tools and guidelines
  - ▶ Repository of 20+ guidelines from the field
  - ▶ Presentations on tools like Elicit
  - ▶ Best practices and approaches among institutions
- ▶ Members across the DACH region
  - ▶ AIT, ITA, ITAS, TAB, Uni Zürich, FH ISI, TA-Swiss, OTH Regensburg,
- ▶ Next meeting is pending







# Examples and Learnings

# First Example: Delphi Survey

- ▶ **Delphi-Based Interventive Futuring for the Energy Transition in Germany**
  - ▶ Evaluation of transformative innovation policies (TIPs) with the aim to improve the definition and implementation of interventions while involving policy participants
- ▶ **Two round Expert Survey**
  - ▶ 1st round: eliciting opinions; 2nd round: weighting opinions; Qualitative and Quantitative
  - ▶ Experts anonymous to each other: No group pressure and less bias.
  - ▶ Goal is to identify areas of (dis)agreement
- ▶ Common in TA and policy development to anticipate developments, assess impacts, and support decision-making.



# AI supported Analysis Workflow

## 1. Initial Coding

- ▶ Analyse replies and summarize in multiple codes

## 2. Axial Coding

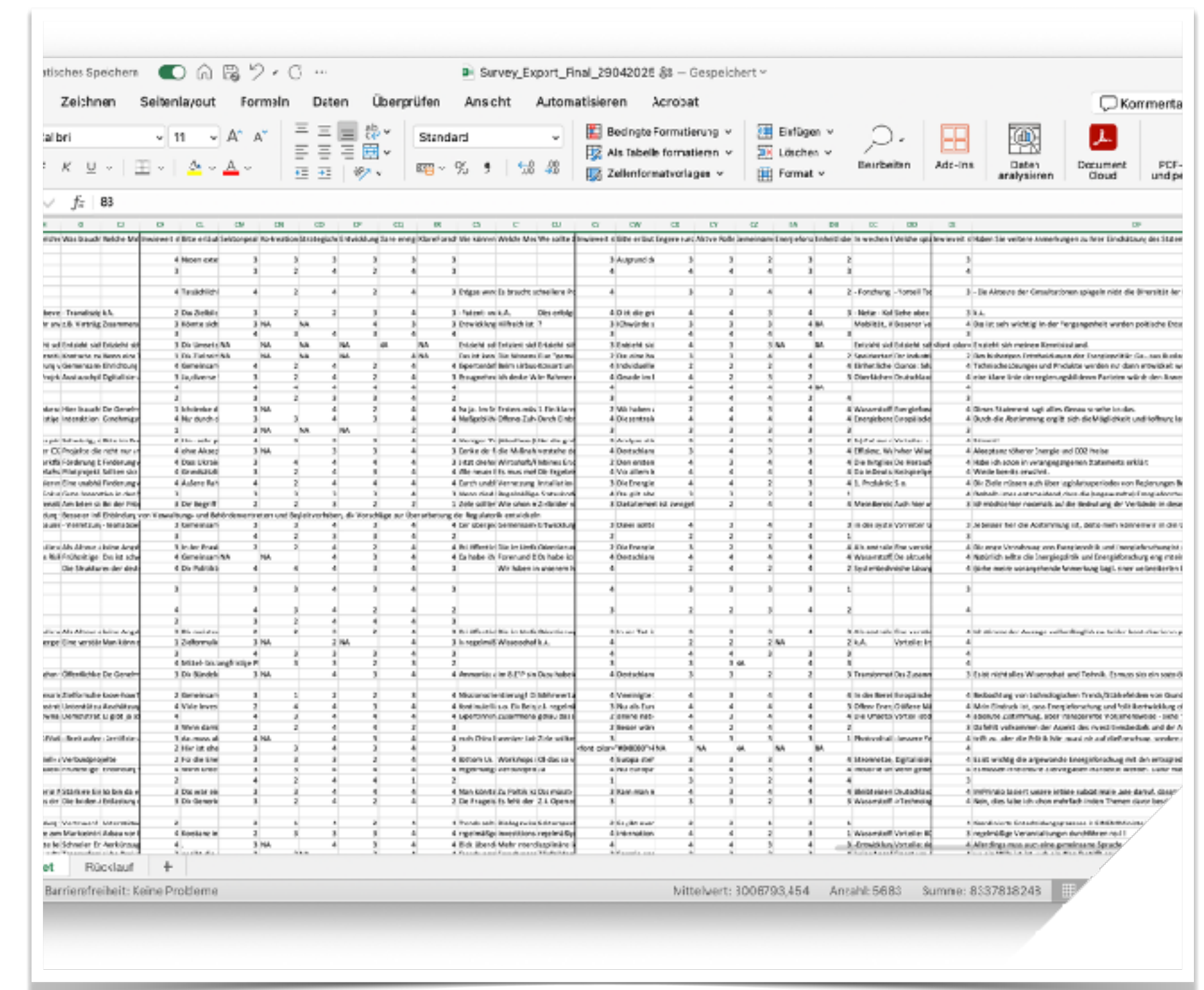
- ▶ Clustering of codes into coherent categories

## 3. Description

- ▶ 100 words summary of each category
- ▶ Tagging which reply belongs to which category

## 4. Human in the Loop / Sanity check

- ▶ Topic experts check categories with original replies



# Challenges

- ▶ **Incorrect import of data**

- ▶ Reading error: ChatGPT has partially invented original texts and ignored references to real answers.

- ▶ **Ambiguity of terms**

- ▶ ‘Users need concrete examples with cost estimates’
- ▶ Neither innovation nor regulation; the term user can be understood ambiguously

- ▶ **Prompting and reputability**

- ▶ Answers and process not repeatable (although same prompt); needed several attempts

- ▶ **Bottom Line**

- ▶ Might have been faster and more nuanced when by hand.
- ▶ Always implement feedback cycles to assess the quality of the results

# Second Example: Futures Garden (2024)

## ▶ EU Policy Lab

- ▶ „Futures Garden brings policymakers and society together to explore what the future may hold. Using **speculative artefacts** - tangible or visual tools that make possible futures concrete, spark imagination, evoke emotional responses, and inspire reflection - and cultivating a collaborative environment where questioning, imagining, and co-creating become possible.“

- ▶ <http://futuresgarden.eu>

## ▶ Until now:

- ▶ Four themes have been explored
- ▶ First two included **Futures Canvas**



# Futures Canvas

- ▶ <https://futurescanvas.com>
- ▶ AI-driven platform for digital participation
- ▶ **Four step process:**
  1. Engagement with a fictional artefact
  2. Write a short comment
  3. React to other comments
  4. See the overall results
- ▶ **Credits:**
  - ▶ Christian Rauch & Tanja Schindler



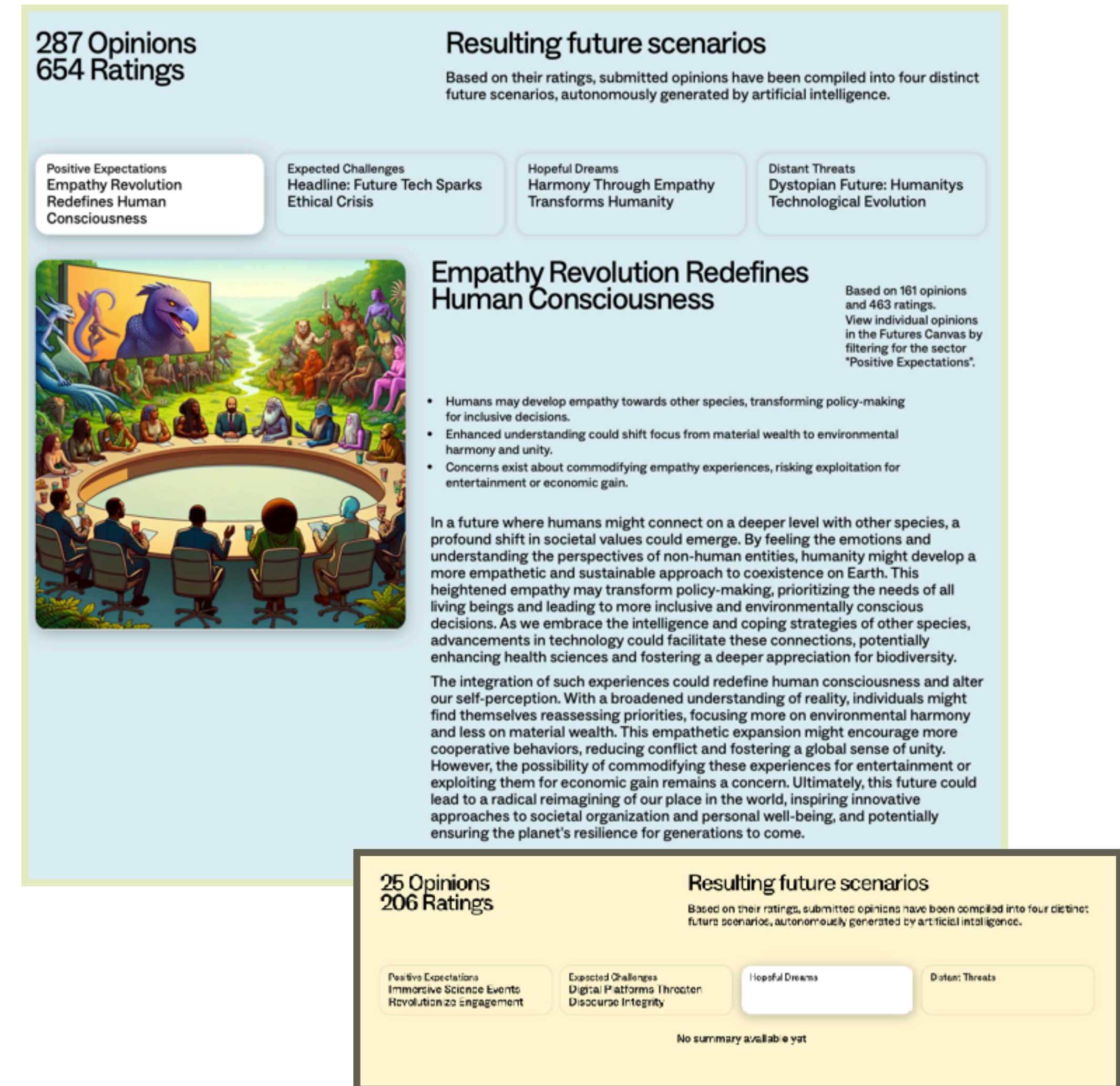
# AI driven scenarios

## ▶ Results

- ▶ Creates four scenarios
- ▶ Write a brief description
- ▶ Creates a visualisation
- ▶ Helps to get an overview in realtime

## ▶ Weakness

- ▶ Weighting of results not transparent #BlackBox
- ▶ Results depend on the quality and quantity of the data
  - ▶ Does not work with low available data
  - ▶ BS in = BS out
- ▶ Results / Visualisation might bias the feedback



## Third Example: Imaging Futures (2025... ongoing)

- ▶ Visionworkshop on Quantum Technologies in Germany

**We are in 2045(+). Quantum technologies work! New technologies, like Quantum Computing and Sensing, are an additional available backend. As an invisible but important infrastructure, it has changed industries and optimized different sectors, leading to among others an efficiency increase in various fields. As an enabling technology, it is also followed by new applications...**

**Further, these technological advancements have also led to environmental, cultural and social changes. Not only on the national but also on the global scale.**

**The pioneers of the field, i.e. the companies and countries that supported the development and research early on, are now harvesting the fruits of their efforts.**

# Visualisation according to ChatGPT



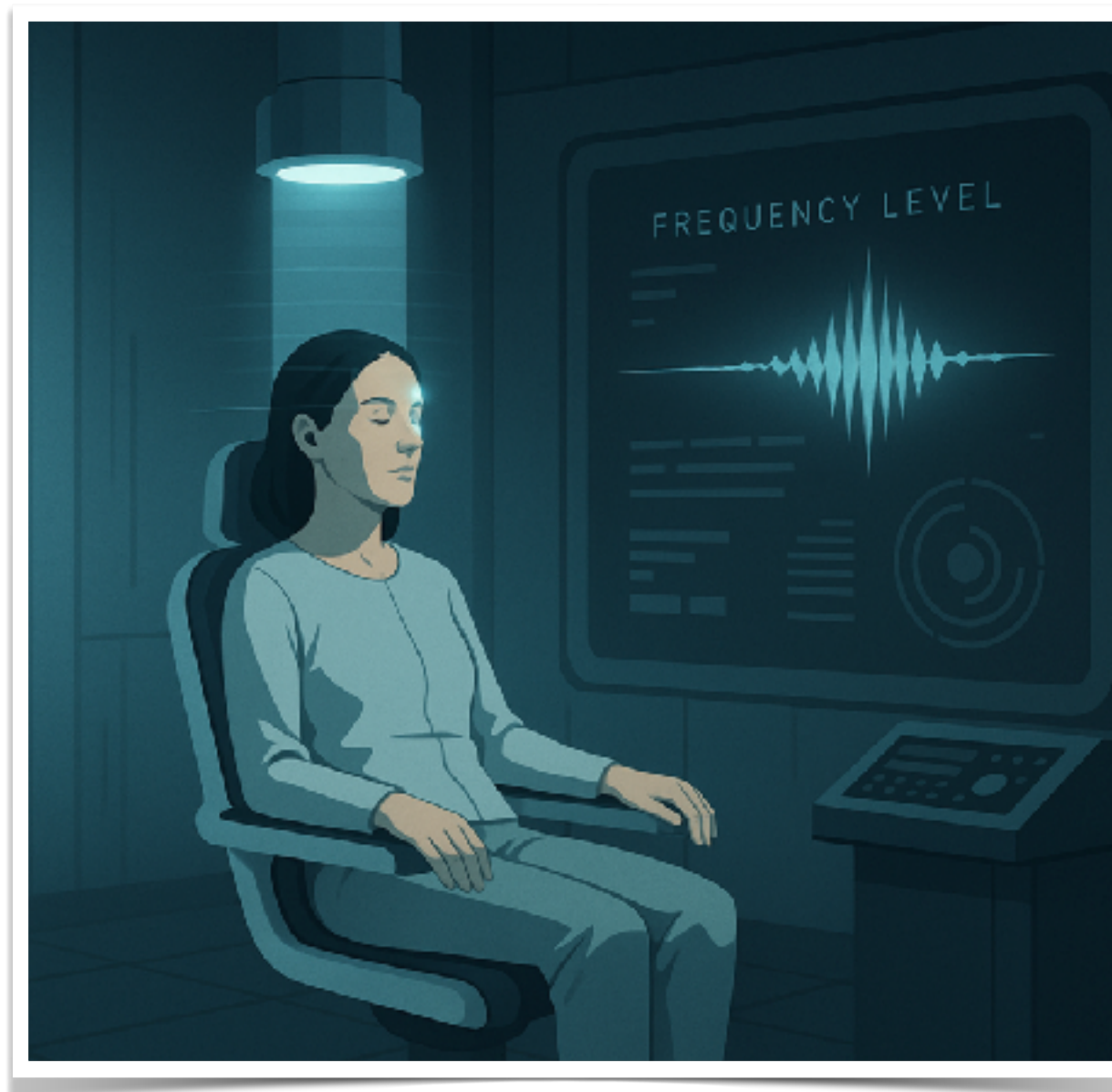
# Visualisation according to ChatGPT

- ▶ **Visual aesthetic**
  - ▶ Generic icons of SF futures
  - ▶ Color-scheme: AI blue
  - ▶ Lack of details
  - ▶ Replacement with text instead of images
- ▶ Some futures are not meant to be visualised
- ▶ *"Visual AI helps participants overcome cognitive barriers, inspiring new ideas, contributing with novel concepts, and enhancing collaborative imagination."*  
(Grison 2025)



# Visual aesthetics shape the narrative

- ▶ [Concept loss (noun, m.)]
- ▶ It describes the moment when the original concept is lost in collaboration with AI
- ▶ “The results were more beautiful than I imagined, but it was no longer mine and I forgot what I imagined.”



# Conclusion

## ▶ **Gen AI can support with....**

- ▶ Summarising results
- ▶ Data analysis
- ▶ Visualisation only when clear idea of aesthetic and concept

## ▶ **Becomes problematic with...**

- ▶ Hallucination with research and / or data analysis
  - ▶ Transparency and Human in the loop required
- ▶ Visualisation of generic futures
  - ▶ Lack of control regarding aesthetics

## ▶ **AI tools for TA**

- ▶ [Elicit.com](https://Elicit.com)
- ▶ [Claude.ai](https://Claude.ai)
- ▶ [trendtracker.ai](https://trendtracker.ai)
- ▶ [Futurescanvas.com](https://Futurescanvas.com)

## ▶ **Digital Platforms**

- ▶ [futuresplatform.com](https://futuresplatform.com)
- ▶ [shapingtomorrow.com/](https://shapingtomorrow.com/)

Thank you

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