The Futures of emerging Technologies

Exploring ethical and social challenge through Visioneering

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- Background:
  - Cultural & Media Studies, STS, SF-Studies
  - Future Studies

- Dual affiliation:
  - Austrian Institue of Technology (AIT)
  - Technical University in Berlin (TU Berlin)
  - Alumni University of the Arts, Berlin (UdK Berlin)

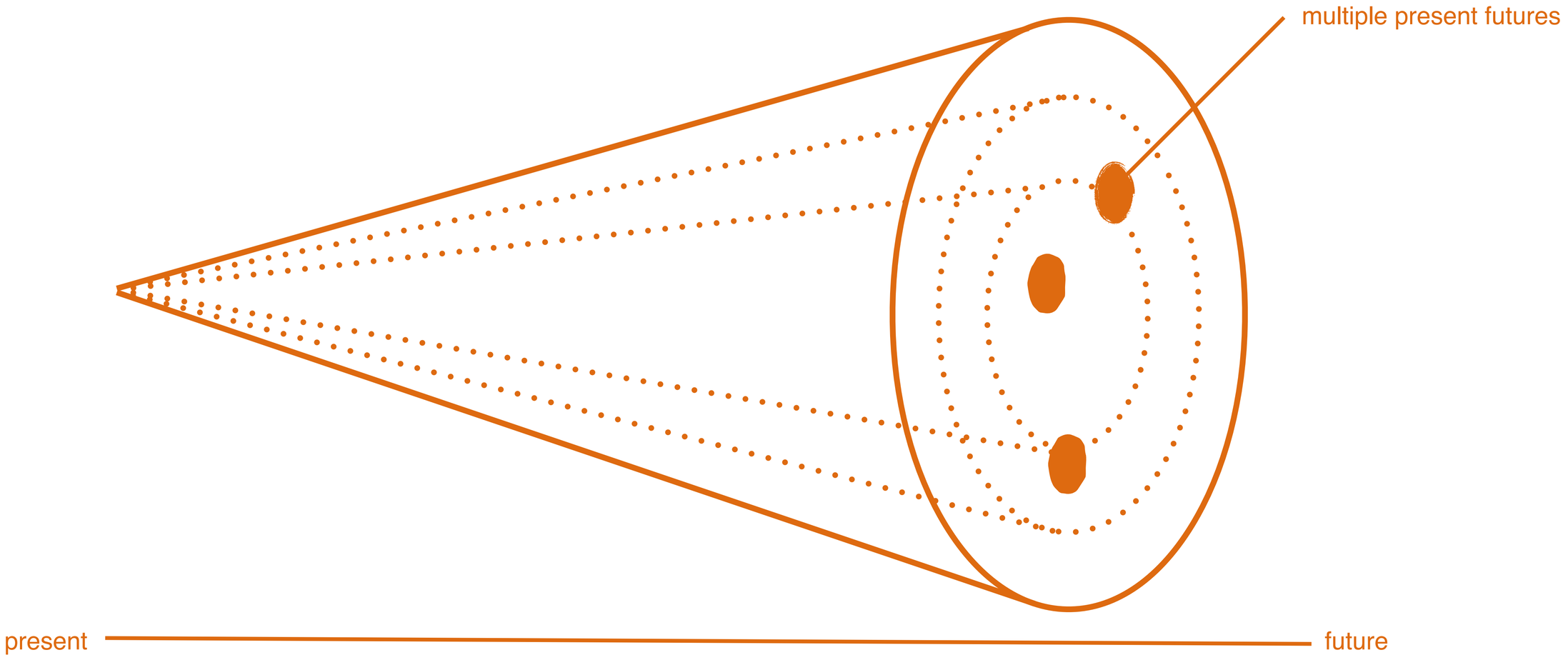
- Imaginary Research
  - Particularly imaginaries of future technologies (e.g. Neurotech)

Future studies as Imaginary studies

(Imaginationsforschung)

Different Futures

Futures Cone

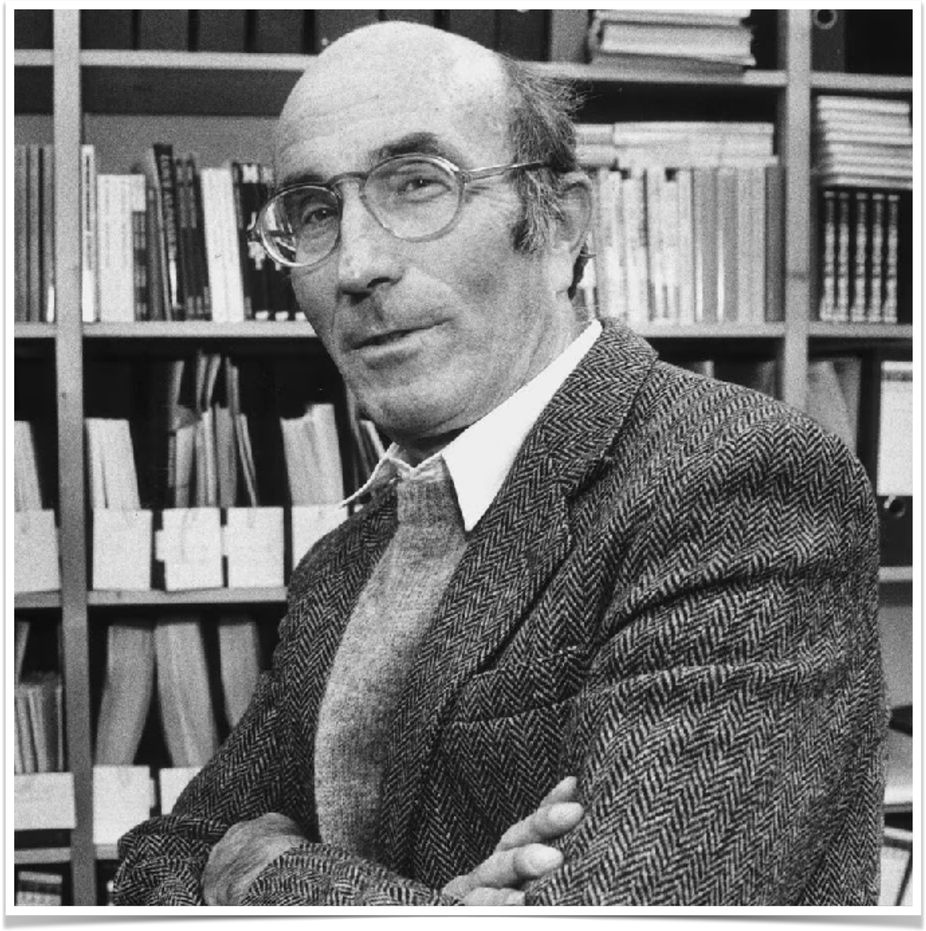


Voros, Author Joseph. 2017. „The Futures Cone, Use and History“. The Voroscope. Abgerufen 5. September 2018 (https://thevoroscope.com/2017/02/24/the-futures-cone-use-and-history/).

The Pluralisation of the future

- *The future* is a "warehouse of possibilities (Luhmann, 1990, p. 120)

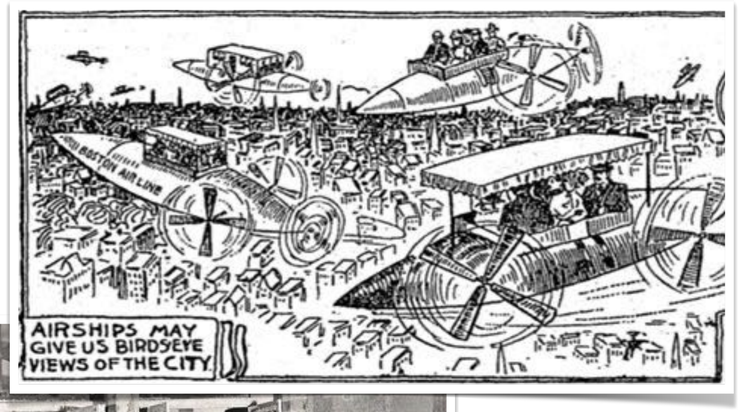
- *Future* distinguished in...
  - ***Future present*** - a moment later than now.
  - ***Present futures*** - present conceptions of possible future presences.

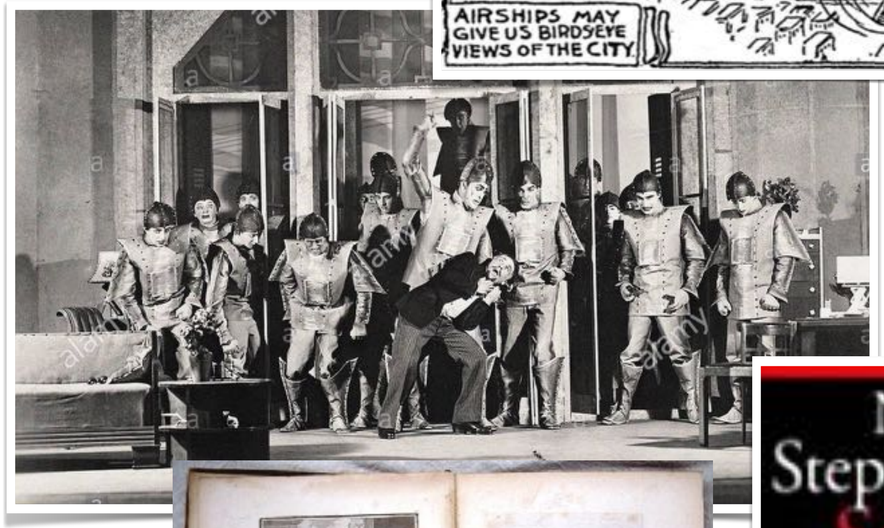


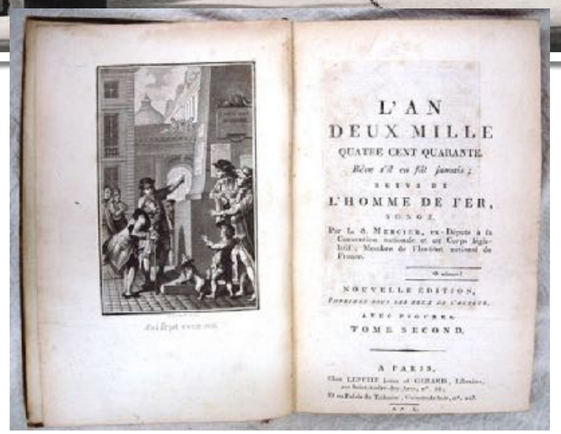
Luhmann, Niklas. 1990. „Die Zukunft kann nicht beginnen: Temporalstrukturen der modernen Gesellschaft“. in Vor der Jahrtausendwende: Berichte zur Lage der Zukunft 1. + 2. Band, Preis JE Buch , herausgegeben von P. Sloterdijk. Frankfurt), Suhrkamp.

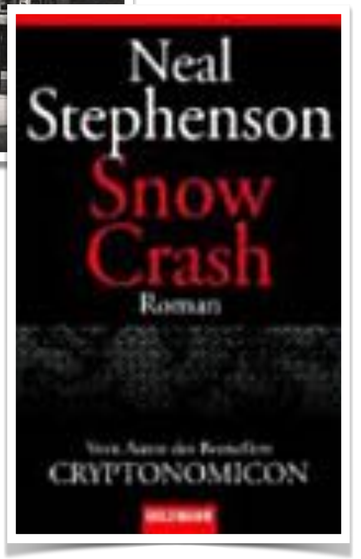
Different Concepts of Futures

- **contested futures**
  - lost futures, forgotten futures and denied futures.
- **Imagined futures**
  - probable futures, plausible futures and possible futures.
- **preferable & unprefarable futures**
  - Visions, Utopia, *Leitbilder*
  - Dystopia, worst-case scenarios
- **inscribed futures**
  - past futures which have become our present
- **and many more…**

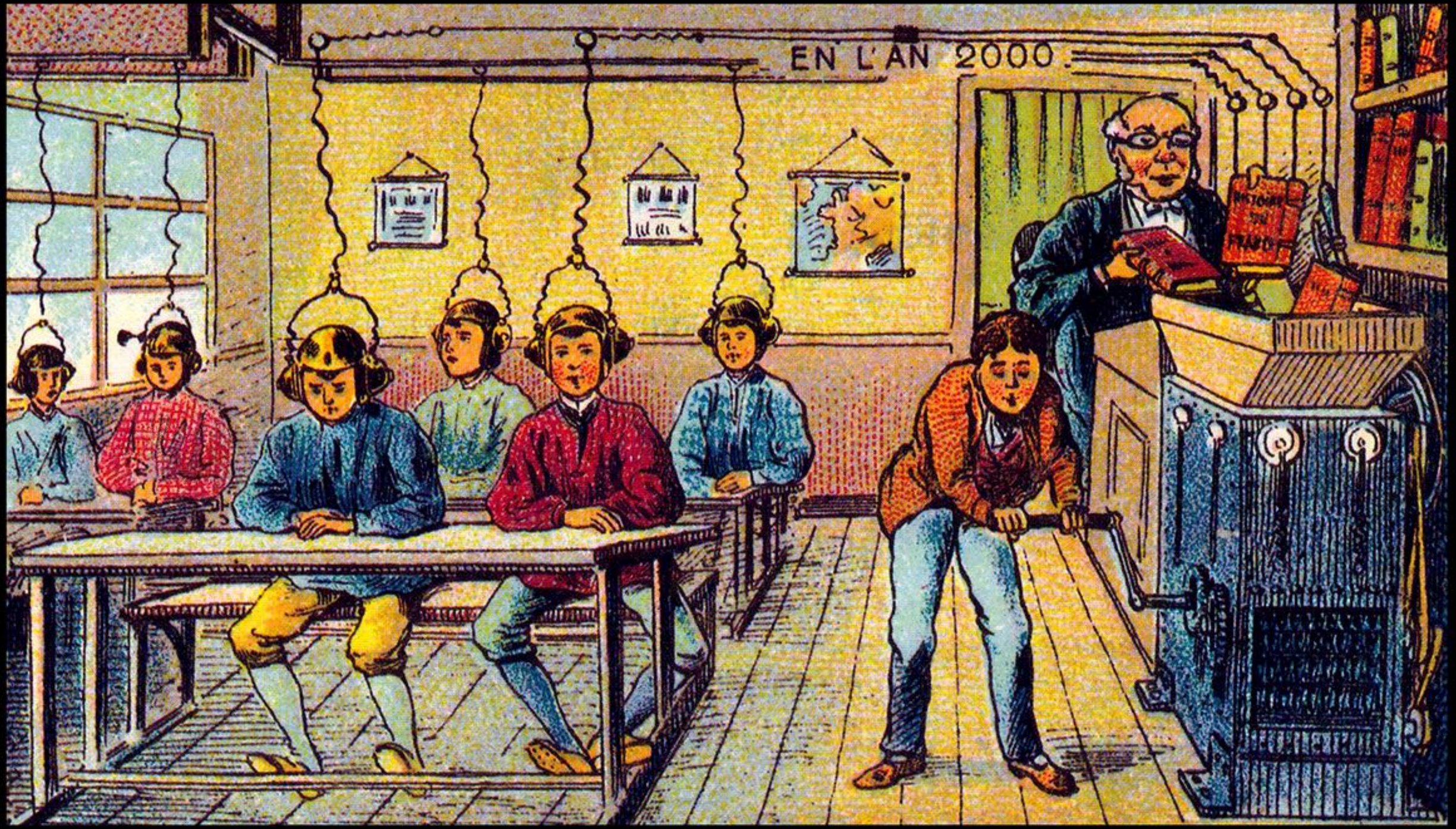









NEUILLY-FONTAINEBLEAU
RESTAURANT


EN L'AN 2000
RETOUR DU TRAVAIL

Preferable Futures

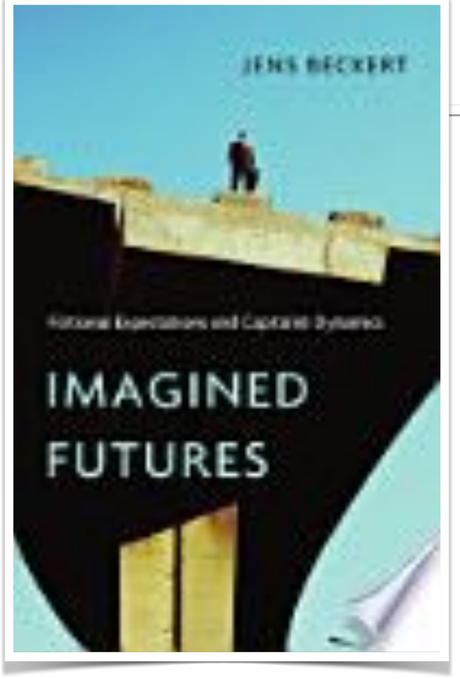
Preferable Technofutures

- Positive Futures, aka Visions
  - „How does the technology make the world a better place?“

- Visions hold values as they share ideas about how the world might **be better** or what the technology should **prevent.**

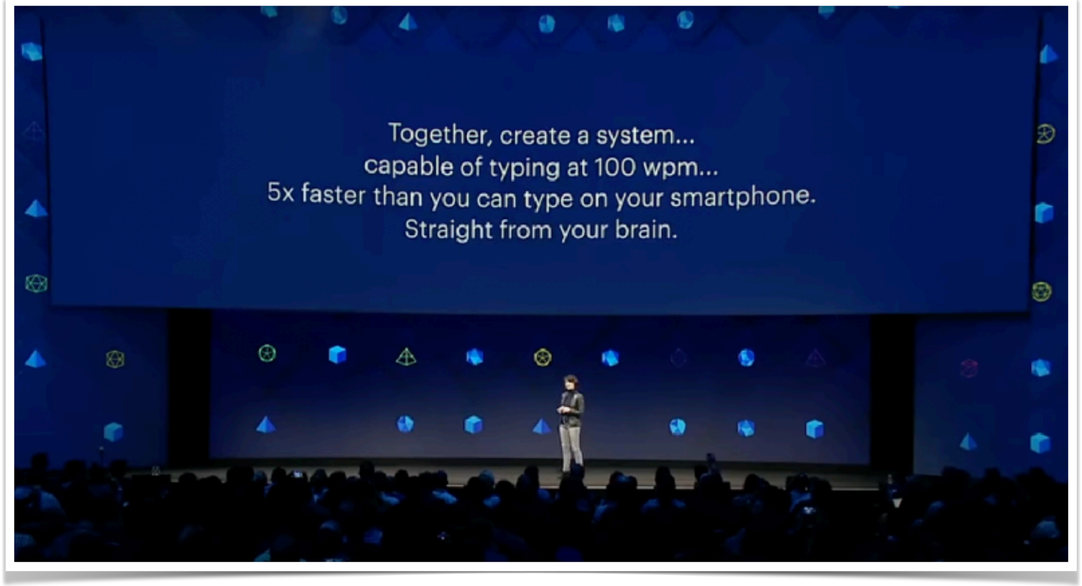
- Visions are used to…
  - … communicate hopes and fears
  - … allign actions of a group of actors
  - … create strategic alliances
  - … create attention through hypes

Meta

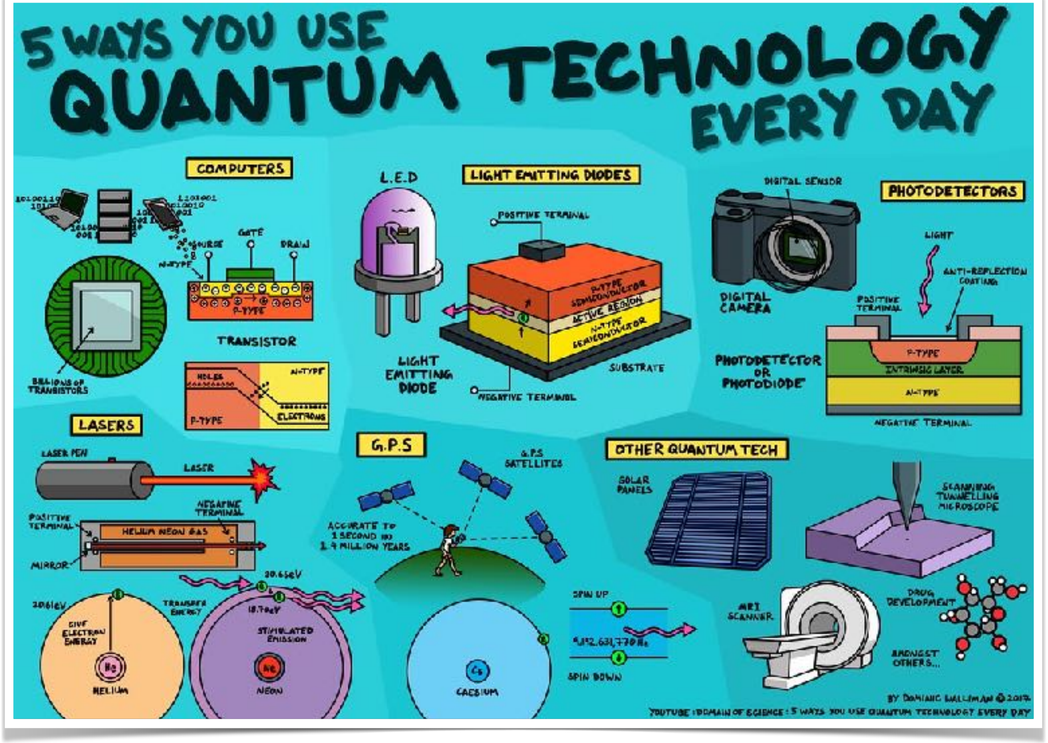


Examples from Neurotechnology

- Envisioning a new form of communication



Visions of Quantum Technology

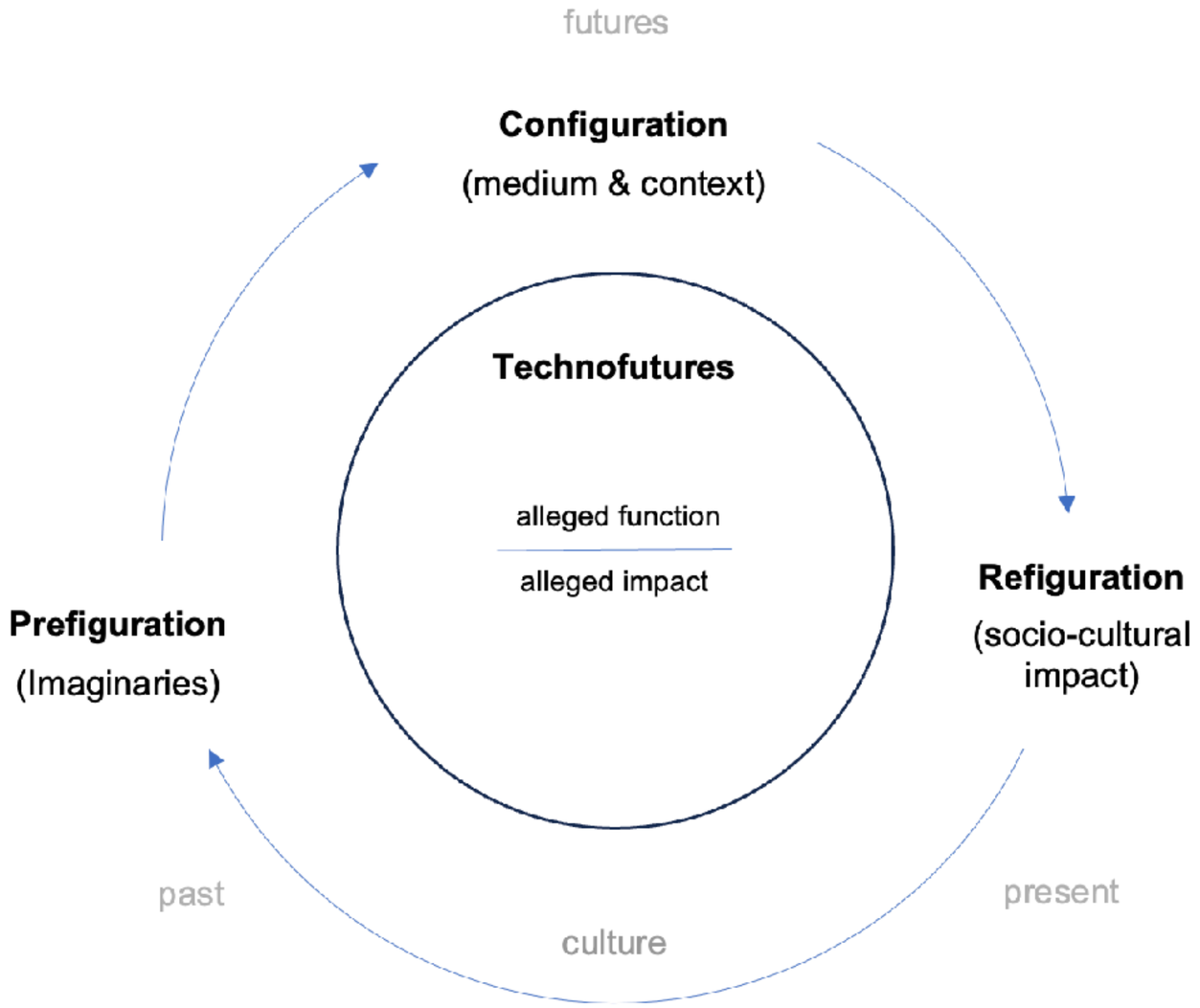


What do you think…

… how will Quantum Technology make the world a better place in ten years?

Corning Incorporated. (2011). A Day Made of Glass.

Technofutures as merging machines



Thin Futures

Smart Glasses

Corning Incorporated. (2011). A Day Made of Glass.

The Future mundane (Foster, 2013)

- **Everyday Futures**
  - Insights into everyday life help to get a better understanding of *The Future* than any holographic interface ever could

- **Accretive space**
  - *The Future* is not a unique visual singularity but a space, the new sits side by side with the old – „99% of the future is already here“

- **Partly broken space**
  - In *The Future*, things will fail like the zoom call or the smart phone that runs out of battery.

- **Unintended Side-effects**
  - „The street will find its own usage for things.“ (Gibson, 1984)

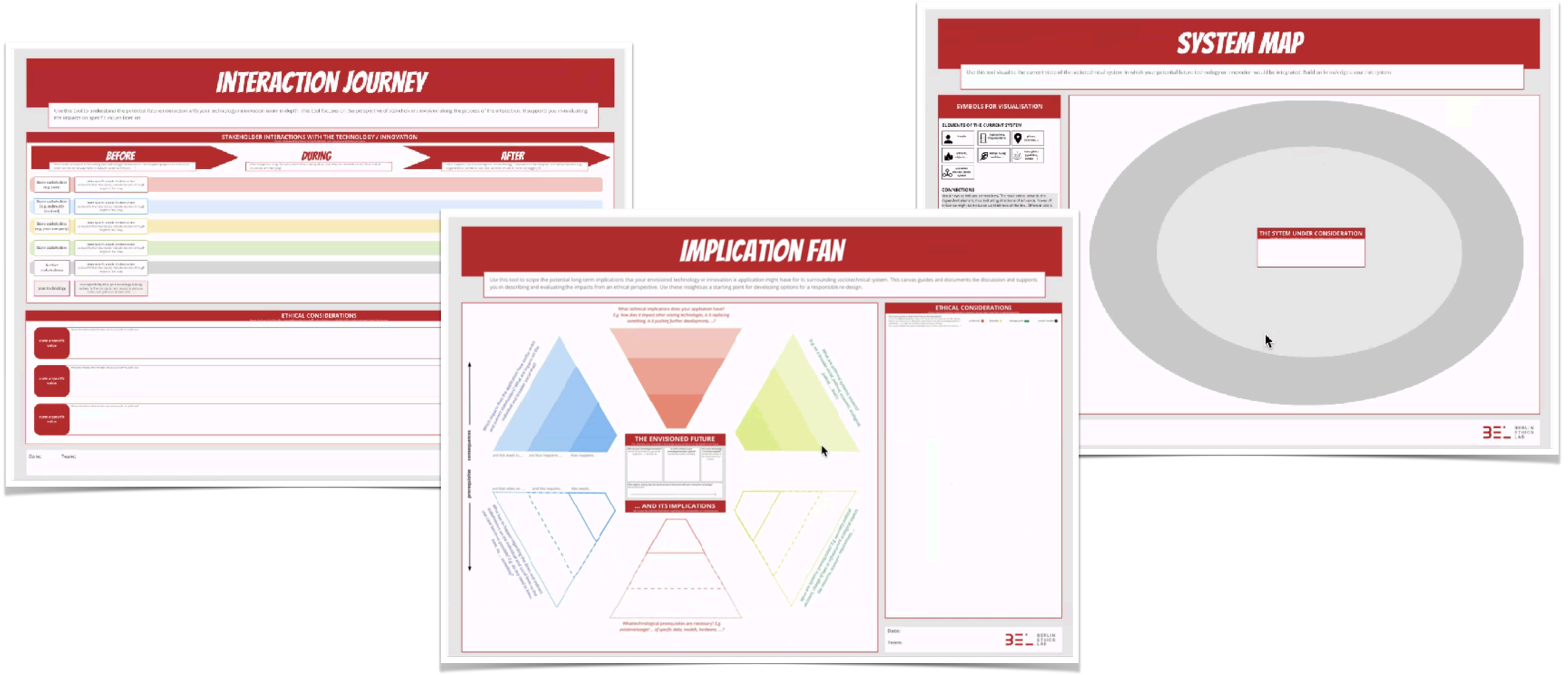
What do you think…

… how will Quantum Technology impact society in ten years?

… how will society impact Quantum Technology in ten years?

… and what are potential pitfalls to be aware of today?

Epistemic tools to identify ethical issues



Stakeholder Futures

Integration of Stakeholders

- **Integration of other perspectives & values to…**
  - … become aware of unknown unknowns
  - … identify ethical issues and counteract
  - … allign development on the needs of the (non-)users

- **Challenges to be aware of**
  - … how to identify relevant?
  - … how to find a common ground and language?
  - … how to allign common visions?
  - … how to integrate results into the actual development process?
  - … how to translate values into code / design / architecture?

Example: Techethos

- **The TechEthos game: Ages of Technology Impacts**
  - techethos.eu

- **Overview:**
  - 20 workshops
  - Dec 2022 – March 2023
  - 6 countries (Austria, Czech Republic, Romania, Serbia, Spain, Sweden)
  - 331 participants (XR, NT and Climate Engineering)

- **Objective:**
  - Elicit attitudes & values to inform regular guidelines

What do you think…

… who would be relevant stakeholders for quantum technology?

Corning Incorporated. (2011). A Day Made of Glass.

Wrap Up & Take-Aways

Wrap up & main takeaways

- There are multiple Futures in the present
- Each future holds values that might conflict with others
- Becoming aware of the futures we follow and discuss the implicit values helps to create responsible technologies

Thank you!

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