Workshop Report "Visions of Quantum Technologies: The Ethics of Technofutures"

1. Description

Emerging technologies, such as quantum technologies, already exist in the form of future-oriented projections—visions, expectations, hopes, and fears. These projections matter: they shape the development of technologies by influencing the decisions we make today. As such, "technofutures" are a meaningful subject for ethical reflection.

In this workshop, QISS PhD Candidate Eline de Jong explored how to put an "ethics of technofutures" into practice, focusing in particular on *vision assessment* as a method for the ethical analysis of technological imaginaries. This theme closely aligns with the University of Amsterdam's newly launched Research Priority Area (RPA) on methodologies for fostering public engagement with science and technology.

The workshop featured a keynote lecture by Professor Armin Grunwald, followed by several presentations demonstrating different applications of vision assessment. Each presentation was accompanied by a discussion, allowing participants to exchange ideas on the ethical significance of technofutures and the most effective ways to study them.

The event took place at the Institute for Advanced Study (IAS) in Amsterdam and occupied a full afternoon. The IAS kindly provided the venue free of charge. Funding from the RQSC was used to cover catering and the travel expenses of invited speakers. In total, there were five presentations and 18 participants.

2. Programme

After a round of introductions and a welcome by Eline de Jong and Sebastian De Haro, the programme began with a keynote lecture by Professor Armin Grunwald, the originator of vision assessment.

Grunwald discussed how this approach emerged as a response to the limitations of traditional technology assessment, which often struggles to address the profound uncertainties surrounding emerging technologies. Vision assessment shifts the analytical focus from prospective technologies themselves to the *ideas and imaginaries* that attribute meaning to them. Grunwald emphasised the ethical importance of studying such visions, since imaginaries of the future actively shape the present. A lively discussion followed, centred on whether it is meaningful to assess highly speculative futures. The consensus was that—even when highly speculative or implausible—visions remain valuable study objects because they reveal much about current societal values and expectations.

In the second presentation, Eline de Jong introduced her study of current visions of quantum computing. She operationalised the general approach of vision assessment into a structured, two-stage analysis: first identifying current visions, then subjecting them to ethical scrutiny. Four visions were examined, alongside a figurative *heatmap* of ethically salient issues such as pronounced techno-optimism, technosolutionism, and the moral legitimation of innovation agendas through promised benefits. The ensuing discussion addressed whether vision assessment might inherently exclude critical voices since visions are generally imaginaries of desirable futures. Participants concluded that negative expectations can also shape visions of a future worth pursuing.

After a short coffee break, the programme resumed with three concise *research pitches*, each presenting a distinct approach to studying visions of future technologies.

Wenzel Mehnert (TU Berlin, IAT) introduced his *Future Circles Framework*, a Ricoeur-inspired model that conceptualises every technofuture as a narrative passing through prefiguration, configuration, and refiguration stages. Each stage offers a different analytical angle on how visions are formed and transformed.

Linda Hofman (UvA, Fontys Hogeschool) discussed citizen involvement in vision research, highlighting the *Future Literacy Lab* method as a way to equip citizens to engage in envisioning future technologies and to surface tensions between expert and lay perspectives.

Gina-Maria Pöhlmann (University of St. Gallen) presented a *quantitative* study of policy narratives surrounding quantum computing. She identified four dominant narratives within the policy discourse and demonstrated how their prominence varied over time and across institutional actors.

3. Outlook

This workshop was the first to focus specifically on the study of visions of quantum technologies, bringing together researchers who are addressing similar themes and methodological challenges. The discussions—both during and after the event—helped foster a growing network and contribute to the refinement of methodological frameworks for studying technofutures. Also,the insights generated during the workshop will directly inform Eline de Jong's ongoing research on visions of quantum computing and their ethical assessment.