Meeting report: "Re-thinking/re-configuring participation". Conference, 2021 (online)

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The annual conference of the German Society for Science and Technology Studies (GWTF e. V.) took place online in November 2021 and invited diverse perspectives on the question of (citizen) participation and inclusion in science. It was the second GWTF conference in an online-only format, allowing for this year's focus to be critically reflected in both contributions and formats. While the conference traditionally aims at including different communities pursuing social studies of science and technology, in recent years it focused on engaging with novel science and technology studies (STS) scholarship and was complemented by a networking workshop (see further information). The conference highlighted, that scholars are currently finding new ways to interact with audiences, questioning (dis-)empowerment effects of specific participation formats.

Inclusion and exclusion in diverse participatory settings and setups

Prevailing calls for citizen participation in scientific knowledge production and the development of technologies have been met with various forms and formats depending on the respective academic disciplines and social areas of their development. New collaborative platforms, dashboards, and other digital media facilitate exchange and collaboration between citizens and scientists, for example, by establishing new data collection networks. Not least the digitalization push in the wake of COVID-19 distance measures, however, has shown that digital formats not only offer opportunities for actively including citizens, but can also generate new exclusion effects and might be met with rejection. The conference explored participation in three main areas of current interest, namely participatory laboratory settings, participatory models for and understandings of artificial intelligence (AI), and citizen science. Participation was also addressed in work-

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shops in different collaborative online formats inviting reflection on their in- and exclusionary effects.

Samuel Simon's (Center for Advanced Internet Studies [CAIS]) 'Participatory Digitalization Research' workshop offered, for instance, participatory methodologies *by doing*, using digital brainstorming, survey, and mapping applications. He showed how there is a need for shared spaces and suitable (hybrid) formats to actively involve relevant stakeholders.

Participatory Laboratories

In the first thematic panel, Andreas Bischof (TU Chemnitz) presented an inventory of existing 'living lab' approaches in scientific research and engineering, highlighting epistemic tensions implied by the notion of the 'living lab': Such approaches are set up close to spaces of everyday life, but often form a 'third space' between academic contexts and actual living environments. Bischof problematized the projects' specific timeframes for technology development that disregard (unplanned) variations provoked by the co-presence of citizens as deviances, instead of considering its value as 'unstructured encounters'. Participation is often not explicitly discussed and evaluated as a (shared) value and/or a debt owed, but is understood more instrumentally as a unilateral contribution by citizens and means to an end (i.e. technology development). Bischof stressed that inclusionary methodological quality criteria are missing in many projects.

Julia Backhaus, Stefan John, and Ana de la Varga (RWTH Aachen) also reflected on living labs as participatory platforms committed to transformatory practices in technology development in real-world contexts. Similarly to Bischof, they argued that real-world laboratories lacked evaluation criteria reflecting on co-design opportunities and associated democratic decision making, including the (im-)possibility of non-scientific actors to gain scientific authority. The endeavor to develop necessary indicators for evaluating knowledge transfer iteratively and in participatory ways guides their next research phase. In that, Backhaus et al.'s research outlook might offer one step in answering Bischof's call for (methodological) quality criteria supporting inclusion of diverse (non-scientific) actors throughout the research and development process.

Participatory Artificial Intelligence

Artificial intelligence (AI) creates novel research settings with links to a growing number of areas of everyday life. For example, Miriam Fahimi (University of Klagenfurt) discussed insights from ethnographic research in a company developing AI technologies for credit scoring systems. She showed how in- and exclusion in this field may exist in the form of (in)access of the involuntary 'clients' of the company's machine learning-driven scoring system. Applications that build on AI may target any citizen, creating new challenges for researchers contributing to their development. That is why ideas and practices of explainability in AI, or in short XAI, aiming at black-boxed algorithmic techniques and systems, are gaining traction as a 'solution' both

in development projects and in companies employing AI. XAI is intended to make AI 'trustworthy', allowing targeted citizens to influence an algorithmic decision's outcome by showing which changes in attributes or behavior may change that decision. XAI creates various novel in- and exclusionary effects, for example, if only specific citizens are considered as 'end users' or if only particular social science perspectives are possible to be included in the already decided-upon XAI tools.

This raises the broader question of who is being heard in the 'arena' of AI, as Carsten Ochs (University of Kassel) put it. Answering this question requires not only to be methodologically capable of registering different voices. One must also do justice

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to the different ways in which these voices are articulated – and be able to learn from the fact that those affected may remain silent. Building on 'situational analysis', Ochs presented a cartography of the AI arena depicting the modes of participation and speech of different interlinked 'worlds' and actors. While expert accounts of AI and considerations of its development, deployment, and effects are part of these world's core practices, other accounts may be more difficult to extract and research. AI thus brings more complex in- and exclusionary mechanisms and stages into play, such as 'forced' and unwitting inclusion, and (un)explainable technologies, and requires us to rethink our own modes of researching inclusion and exclusion.

Citizen Science

Citizen science as a well-established mode of participation may be able to address some of the challenges of AI and living labs. A podium discussion highlighted diverse ideas, and differences between understandings of participation and in-/exclusion in various projects. Claudia Göbel explicated that inclusion in citizen science can be understood and implemented in different ways, from seeing citizens as 'prosumers' who contribute data, to engaging citizens in the scientific process including their 'expertise' and 'experience' for data collection, and establishing co-design in/of research settings as the most democratic form of citizen participation. Erik Aarden showed that data can not only be contributed in quantitative forms, established through semi-automated monitoring devices, but may also include nature observations raising aesthetic considerations.

The panelists highlighted the role of new digital media and technologies in facilitating, inviting, or hindering participatory potentials of citizen science projects. In particular Kevin Altmann and Andreas Wenninger emphasized how an increasing platformization and toolification may serve simultaneously as

in- and exclusionary mechanisms. Participants may become capable of 'controlling' the quality of research processes, after gaining expertise of, for instance, specific sensor-driven measurement devices providing them – to some extent – with 'epistemic authority'.

Studying participation in science and technology

Taking up the question of how research may be able to understand and facilitate 'democratic' participation, Jan-Peter Voß's (TU Berlin) keynote scrutinized the making of democracy, rather than taking it as an unquestioned blackbox. He argued that a taking-apart of the performative practice of representation inherent in democracy is the task of an STS striving to productively involve the public. While STS has concentrated on the praxeological reconstruction of the scientific representation of nature and objects, a likewise reconstruction of the political representation of society has so far been absent. There is a lack of praxeological analysis of democracy as a specific mode of world-making, leading Voß to call for a practice turn to consider the performative practice of representing.

Voß proposed that STS takes up the open questions that remain when acknowledging that not everyone can always be involved – that collective social will and interest also does not exist independently of representation but is shaped by it – and that no method of representation is neutral. Instead of simply 'opening up' or limiting access based on technical expertise, a reflexive methodological approach to the 'ontological politics of political representation' is needed. What is required is to design and use methods in awareness of their performativity and side-effects.

In summary, participation in science and technology projects was shown to be a contingent, situated endeavor, which may even include unwitting citizens, and may produce exclusion by the very inclusion mechanisms applied. Its understanding requires different strands of the social study of science and technology to highlight the diversity of relevant aspects (e.g. about involved actors' perspectives and platforms' two-sided role), offer different solutions, such as methods for unpacking blackboxes, and allow for posing questions such as how the modes that intend to facilitate participation may be governed.

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Further information