

Call for Abstracts: “Practices and concepts of ‘care’ in sustainability transformations. Critical perspectives in technology assessment”

TATuP Special topic in issue 34/1 (2025)

Deadline for submitting your abstract: 29 April 2024

Research interests

The aim of this TATuP Special topic is to present new research and experience with care concepts, approaches and practices in the context of sustainability transformations and thus to provide new impetus to technology assessment (TA). We therefore invite scholars to present and discuss the empirical value of different concepts of care in critically assessing the role of technologies in the appropriation and economic valorization of nature and related regulatory issues in sustainability transformations. The following questions could be addressed:

- How is the concept of care used as a lens, as a political category, or as a transformative principle to contribute to TA? How can it contribute to a more sustainable and caring economy?
- What empirical evidence is available on whether and how care goes beyond and adds to existing debates and concepts such as the precautionary principle or frameworks for responsible research and innovation (RRI)?
- What are the achievements, obstacles, and constraints associated with this approach? Given its historical background, why has it not been effectively incorporated into TA practice? And what potential shortcomings or unintended consequences might arise from the application of this concept?
- How can concepts of care be used in practice to inform technology policies, governance processes, and regulation on digitalization, artificial intelligence, genome editing, etc. toward sustainability transformations?
- How can care contribute to or be enriched by decolonial or degrowth perspectives when assessing the role of technologies?

This Special topic invites scholars from political science, sustainability studies, sociology, anthropology/ethnography, science and technology studies, or innovation studies to critically

engage with practices of care in TA of sustainability transformations. We expect contributions on the importance of care for the empirical analysis of technological innovations and as a guiding principle for designing policies and governance processes in sustainability transformations. The research articles should illustrate how the concept of care can be applied and how such a perspective on technologies can add important aspects to current debates in TA.

Background: The concepts of 'care' in technology assessment and sustainability transformations

This TATuP Special topic explores practices of care in the assessment of technologies and their contribution to sustainability transformations. It directs attention to the socio-ecological transformation processes that must align with the political institutions and the production and lifestyles in industrial capitalism (WBGU 2011; Brand and Brad 2019). Such transformations can only succeed if social inequalities are addressed and overcome. Critical approaches to sustainability such as the concept of 'care' allow to take into account these social dynamics (e.g., Gottschlich and Katz 2020; Anderson 2021).

We refer to care in a broad sense “as a species activity that includes everything that we do to maintain, continue, and repair our ‘world’ so that we [and other earth others] can live in it as well as possible” (Fisher and Tronto 1990, p. 40, cit. in Tronto 1993, p. 103). Existing work on the concept of care and technology policy highlights its potential to draw attention to issues often neglected in innovation theory or risk assessment – such as responsibility, relationality, contextuality, dependency, or power relations – and to caring institutions that regulate and govern social or technological innovations, political processes, and everyday economic practices (e.g., Curry 2002; Groves 2015; Martin et al. 2015; Preston and Wickson 2016; Whittingham and Wynberg 2021).

The aim of this Special topic is to explore the value of concepts of care in order to highlight and enable alternative imaginaries of technologies and practices of TA in sustainability transformations. A key hypothesis is that any kind of technological innovation, assessment, related economic activity, and political governance to which the concept of care is extrinsic will ultimately prove incapable of achieving sustainable economies and societies.

Policy initiatives for sustainability transformation, such as the green economy, the bioeconomy, and the circular economy, have all been criticized for being too focused on economic growth and technological fixes (Boyer et al. 2023; Eversberg et al. 2023; Gottschlich et al. 2014). However, despite this legitimate criticism, some technologies such as biotechnology or precision farming applications already play an important role in producing biomass for the bioeconomy, and digital technologies are key to smart infrastructures for the energy transition. Others are considered highly promising for future developments such as genome editing, synthetic biology, and biobanks (Grunwald 2012; Priefer et al. 2017; Karafyllis 2020; Hackfort 2021). This Special topic aims to address these technologies that shape our society, while arguing against technological solutionism. As the risks and impacts of existing and emerging technologies on society and nature are often uncertain, unknown, or controversial, they need to be assessed with a focus on precaution and care.

To some extent, this has already been done in participatory TA, expert assessments (Sauter 2005; Albrecht et al. 2017; Stirling et al. 2018; Reinermann et al. 2022), responsible research and innovation (Asveld et al. 2015; Felt 2018), and other risk assessment approaches in key sectors relevant for sustainable development, such as energy, planning and infrastructure, or

food and agriculture (e.g., Levin-Keitel et al. 2018; BfR 2019; Thompson 2020; CSPO 2021; Participedia 2023¹).

However, it has been argued that many of these approaches remain within flawed and overly narrow technology and risk assessment frameworks that do not sufficiently consider the existing societal and political context with its complexities and uncertainties (Groves 2015; Garnett 2021; Whittingham and Wynberg 2021).¹¹

Recent work using care as a lens to assess the role of technologies includes decolonial or degrowth perspectives to critique the “objectification of nature” (Arora and Van Dyck 2021, p. 254) and the solutions that emerge from the very same underlying paradigms. Developed in political science, gender studies, ecological economics, and technoscience, “the principle of care replaces the techno-scientific ideal of control” (McGreevy et al. 2022, p. 3). The latter is characteristic of a notion of modernity and progress that is inherently oriented toward the degrading industrial use of nature based on science and technology.

In contrast, care as a concept calls for the acknowledgement of uncertainty and complexity, and a broadening of our understanding of appropriate technologies and their implications for other non-technological or low-technology approaches to maintaining nature’s reproductive capacity as key for sustainability (Arora and Van Dyck 2021). Care not only represents an ethical principle for individual agency and collective action; it is also a democratic and transformative principle (Gottschlich et al. 2014). Concepts of care aim at a greater awareness of our relationality with nature and, against this background, a more precautionary economic and technological policy to meet the challenges of justice and sustainability (Gottschlich and Hackfort 2022). For example, a precautionary approach to farming considers, among other things, nature’s own time, aims to preserve and improve soil fertility (Puig de la Bellacasa 2011), combines ecological and social justice issues, and applies the principle of care and precaution when assessing the use of new technologies such as genetic engineering (Whittingham and Wynberg 2021).

¹ A crowdsourcing platform on different pTA procedures in fields such as energy, food, infrastructure, and agriculture.

Guest editors of this TATuP Special topic

Sarah Hackfort, Dr., Humboldt-Universität zu Berlin, Berlin, DE, sarah.hackfort@hu-berlin.de, <https://orcid.org/0000-0001-6678-8759>

Julia-Lena Reineremann, Dr., FernUniversität Hagen, Hagen, DE, julia.reineremann@fernuni-hagen.de, <https://orcid.org/0000-0002-8571-6563>

Daniela Gottschlich, Prof. Dr., Hochschule für Gesellschaftsgestaltung, Koblenz, DE, daniela.gottschlich@hfgg.de, <https://orcid.org/0000-0001-5675-8556>

Submissions

- Please send your abstract by e-mail to redaktion@tatup.de by **29 April 2024** at the latest.
- Length of the abstract: max. 1.5 pages.
- The editorial office will contact the author submitting the abstract.
- Please state full names, e-mail addresses, and institutional affiliations of all co-authors.

Schedule

| | |
|----------------------|---|
| 29 April 2024 | Deadline for abstract submission |
| May 2024 | Notification of invitation or rejection to submit research articles |
| August 2024 | Deadline for submission of research articles, followed by peer review |
| October 2024 | Feedback from the reviewers, followed by revision by the authors |
| November 2024 | Submission of the revised research articles |
| December 2024 | Further revisions, if necessary |
| February 2025 | Editorial deadline |
| March 2025 | Publication (print and online) |

References

- Albrecht, Steffen; Diekämper, Julia; Marx-Stölting, Lilian; Sauter, Arnold (2017): 'Green' Genetic Engineering and Genome Editing: Towards a Reorientation of Science Communication. In: TATuP – Zeitschrift für Technikfolgenabschätzung in Theorie und Praxis 26 (3), pp. 64–69. <https://doi.org/10.14512/tatup.26.3.64>
- Anderson, Sheena (2021): Eine intersektional-feministische Perspektive für die Klimabewegung. Zur Anerkennung und Wertschätzung (marginalisierter) Stimmen von Black, Indigenous und Women of Color. In: *feminia politica, Schwarze Feminismen/Black Feminisms* (ed). Tübingen pp. 64–78.
- Arora, Saurabh; Van Dyck, Barbara (2021): Refusal as Radical Care? Moving Beyond Modern Industrial Agriculture. In: *Development* 64 (3-4), pp. 252–258. <https://doi.org/10.1057/s41301-021-00310-3>
- Asveld, Lotte; Ganzevles, Jurgen; Osseweijer, Patricia (2015): Trustworthiness and Responsible Research and Innovation: The Case of the Bio-Economy. In: *Journal of Agricultural and Environmental Ethics* 28 (3), pp. 571–588. <https://doi.org/10.1007/s10806-015-9542-2>
- Boyer, Miriam; Kusche, Franziska; Hackfort, Sarah; Prause, Louisa; Engelbrecht-Bock, Friederike (2023): The making of sustainability: Ideological strategies, the materiality of nature, and biomass use in the bioeconomy. In: *Sustainability Science* 18 (2), pp. 675–688. <https://doi.org/10.1007/s11625-022-01254-4>
- Brand, Ulrich; Brad, Alina (2019): Sozial-ökologische Transformation. In: Jan Brunner, Anna Dobelmann, Sarah Kirst, Louisa Prause (eds.): *Wörterbuch Land- und Rohstoffkonflikte*. Bielefeld: transcript Verlag, pp. 279–285. <https://doi.org/10.1515/9783839444337-040>

- BfR – Bundesinstitut für Risikobewertung (2019): BfR-Verbraucherkonferenz Genome Editing. Online. Available online at https://www.bfr.bund.de/de/verbraucherkonferenz_genome_editing.html, last accessed on [02.11.2023].
- CSPO – Consortium for Science, Policy & Outcomes at Arizona State University (2021): Global Citizens' Assembly on Genome Editing. Available online at <https://cspo.org/research/genome-editing/genome-citizens-assembly/>, last accessed on [02.11.2023].
- Curry, Janel (2002): Care Theory and 'caring' systems of agriculture. In: *Agriculture and Human Values* 2002 (19), pp. 119–131. <https://doi.org/10.1023/A:1016074832696>
- Eversberg, Dennis; Holz, Jana; Pungas, Lilian (2023): The bioeconomy and its untenable growth promises: Reality checks from research. In: *Sustainability Science* 18 (2), pp. 569–582. <https://doi.org/10.1007/s11625-022-01237-5>
- Felt, Ulrike (2018): Responsible Research and Innovation. In: Sahra Gibbon, Barbara Prainsack, Stephen Hilgartner, Janelle Lamoreaux (eds): *Routledge Handbook of Genomics, Health and Society* (2), London: Routledge, pp. 108–116.
- Fraser, Alistair (2022): 'You can't eat data'? Moving beyond the misconfigured innovations of smart farming. In: *Journal of Rural Studies* 91, pp. 200–207. <https://doi.org/10.1016/j.jrurstud.2021.06.010>
- Garnett, Kathleen (2021): Novelty, Ignorance and the Unknown: Uncertain Science and the Frontiers of Science Doctrine. In: *elni Review*, pp. 11–24. <https://doi.org/10.46850/elni.2021.002>.
- Gottschlich, Daniela; Roth, Stefanie; Härtel, Annika; Röhr, Ulrike; Hackfort, Sarah; Segebart, Dörte; König, Claudia (2014): Sustainable economy between gender, care and green economy. *Debates – interfaces – blind spots*. CaGE texts No. 1/2014. Berlin.
- Gottschlich, Daniela; Hackfort, Sarah (2022): Care. In: Daniela Gottschlich, Sarah Hackfort, Tobias Schmitt, Uta von Winterfeld (eds): *Handbuch Politische Ökologie. Theorien, Konflikte, Begriffe und Methoden*. Bielefeld: transcript Verlag, pp.307–314.
- Gottschlich, Daniela; Katz, Christine (2020): Relationalität, Naturgestaltung und Caring. Die Bedeutung feministischer Utopien zur Bearbeitung der sozial-ökologischen Krise. In: Benjamin Görgen, Björn Wendt (eds.): *Sozial-ökologische Utopien. Diesseits oder jenseits des Kapitalismus und Wachstumszwangs?* Hamburg: VSA, pp. 303–325.
- Groves, Christopher (2015): Logic of Choice or Logic of Care? Uncertainty, Technological Mediation and Responsible Innovation. In: *NanoEthics* 9 (3), pp. 321–333. <https://doi.org/10.1007/s11569-015-0238-x>
- Grunwald, Armin (2012): Synthetische Biologie als Naturwissenschaft mit technischer Ausrichtung. In: *TATuP – Zeitschrift für Technikfolgenabschätzung in Theorie und Praxis* 21 (2), pp. 10–15. <https://doi.org/10.14512/tatup.21.2.10>
- Hackfort, Sarah (2021): Patterns of Inequalities in Digital Agriculture: A Systematic Literature Review. In: *Sustainability* 13 (22). <https://doi.org/10.3390/su132212345>
- Karafyllis, Nicole (2020): Biofacts, Bioprospecting, Biobanking: A Reality Check of Seed Banks. In: Sabine Maasen, Sascha Dickel, Christoph Schneider (eds.): *TechnoScienceSociety*. Cham: Springer International Publishing, pp.131–156. https://doi.org/10.1007/978-3-030-43965-1_8
- Levin-Keitel, Meike; Mölders, Tanja; Othengrafen, Frank; Ibendorf, Jens (2018): Sustainability Transitions and the Spatial Interface: Developing Conceptual Perspectives. In: *Sustainability* 10 (6), p. 1880. <https://doi.org/10.3390/su10061880>
- Martin, Aryn; Myers, Natasha; Viseu, Ana (2015): The politics of care in technoscience. In: *Social Studies of Science* 45 (5), pp. 625–641. <https://doi.org/10.1177/0306312715602073>
- McGreevy, Steven et al. (2022): Sustainable agrifood systems for a post-growth world. In: *Nature Sustainability* 5 (12), pp. 1011–1017. <https://doi.org/10.1038/s41893-022-00933-5>
- Participedia (2023): Example Case Energy. Available online at <https://participedia.net>, last accessed on [02.11.2023].
- Puig de la Bellacasa, Maria (2011): Matters of care in technoscience: Assembling neglected things. In: *Social Studies of Science* 41 (1), pp. 85–106. <https://doi.org/10.1177/0306312710380301>
- Sauter, Arnold (2005): Grüne Gentechnik? Folgenabschätzung der Agrobiotechnologie. In: Thomas Petermann, Armin Grunwald (eds.): *Technikfolgen-Abschätzung für den Deutschen Bundestag*.

- Das TAB – Erfahrungen und Perspektiven wissenschaftlicher Politikberatung. Berlin: edition sigma, pp. 116–146.
- Preston, Christopher; Wickson, Fern (2016): Broadening the lens for the governance of emerging technologies: Care ethics and agricultural biotechnology. In: *Technology in Society* 45, pp. 48–57. <https://doi.org/10.1016/j.techsoc.2016.03.001>
- Priever, Carmen; Jörissen, Juliane; Frör, Oliver (2017): Pathways to Shape the Bioeconomy. In: *Resources* 6 (1), p. 10. <https://doi.org/10.3390/resources6010010>
- Reinermann, Julia-Lena; Kamlage, Jan-Hendrik; Vries, Nicole de; Goerke, Ute; Oertel, Britta; Schrey, Silvia (eds.) (2022): *Zukünfte nachhaltiger Bioökonomie: Kommunikation und Partizipation in neuen Wirtschaftsformen. Beiträge aus Wissenschaft und Praxis*. Bielefeld: transcript Verlag.
- Stirling, Andrew; Hayes, K.; Delborne, Jason (2018): Towards inclusive social appraisal: risk, participation and democracy in governance of synthetic biology. In: *BMC proceedings* 12 (Suppl. 8), p. 15. <https://doi.org/10.1186/s12919-018-0111-3>
- Thompson, Paul (2020): *Food and agricultural biotechnology in ethical perspective*. Third edition. The International Library of Environmental, Agricultural and Food Ethics; vol. 32; Wiesbaden: Springer.
- Tronto, Joan (1993): *Moral Boundaries. A Political Argument for an Ethic of Care*. New York: Routledge.
- WBGU – Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (2011): *Welt im Wandel. Gesellschaftsvertrag für eine Große Transformation, Hauptgutachten*. www.wbgu.de/fileadmin/templates/dateien/veroeffentlichungen/hauptgutachten/jg2011/wbgu_jg2011.pdf
- Whittingham, Jennifer; Wynberg, Rachel (2021): Is the Feminist Ethics of Care framework a useful lens for GM crop risk appraisal in the global south? In: *Technology in Society* 64, p. 101455. <https://doi.org/10.1016/j.techsoc.2020.101455>