STRN Newsletter

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Sustainability Transitions Research Network.

STRN

Newsletter 51 – March 2024

Content

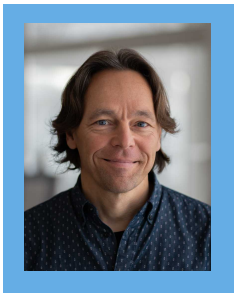
About

The STRN newsletter is published four times a year in March, June, September & December

Cover picture: Francesco Ugaro, Pexels.com

Editorial

by Jochen Markard



It is March, springtime in Europe, and my turn to write the Newsletter editorial. This will be the last in my role as the chair of STRN. I will step down in June and usher in an outstanding incoming chair at the IST in Oslo.

I joined the STRN steering group some time in 2012 when we were busy organizing the 2013 IST conference in Zurich, together with Bernhard Truffer and Lea Fünfschilling and other colleagues from Eawag and ETH. Since then, I supported various STRN activities, mostly behind the scenes. For example: the development of the first STRN governance document, together with Flor Avelino and other colleagues.

With that, we formulated an initial set of rules about how we organize ourselves, including decision-making procedures, elections for steering group members, the board, thematic groups and working groups, etc. Later I became one of the members of the newly formed board, together with Rob Raven and Frank Geels, who was the inaugural chairman.

One of the highlights of these times was the first IST outside of Europe in Ottawa, Canada, in 2019, for which Danny Rosenbloom and James Meadowcroft played key roles in making this possible. And yes, I admit, I was very skeptical at first about so many of us flying to Canada, but it turned out as a great and memorable event, and the last in a while as Covid hit soon after.

And, if I might share this anecdote, even Derk Loorbach came to Ottawa (he was hesitant as well about flying) but he could not let this one slip, as the two of us have this competition going, as the only ones (we know of) who participated in every IST from the very beginning in 2009. Perhaps we'll create a medal one day, and look back at it like the two old guys in the muppet show ☺

When I took over as the chair in 2020, my efforts were toward professionalizing STRN and turning it into an academic association akin to those from other established fields of research. The first, and probably

most important step on this journey was accomplished last year, when (meanwhile) 14 academic institutions came together to support the network as institutional members – through advice and financial support, and hosting the STRN secretariat, to which the Copernicus Institute at Utrecht University generously agreed.

And here we are now, taking STRN to the next part of its journey, to not only continue to support our growing community but to expand the services and resources we provide (e.g., a new PhD school which will be announced soon).

One of the foundational principles of STRN is to be open to scholars from all places and backgrounds, to have no preferential access to events and to embrace a broad diversity of approaches and thinking. In our new phase of professionalization, we have so far managed to maintain these principles, but it requires continued work, from all of us. Some might say we can even do better, and we certainly can. Please, reach out, when you have suggestions of how to improve things. Just be aware that we might ask you to play an active role in what you are proposing ☺

We are always happy to receive feedback (like that from the recent survey) and I firmly believe that we will continue to thrive as a community, in which people come together, support each other, offer constructive feedback and advice. I am particularly impressed, time and again, by the activities and spirit of students in the NEST community and, while many younger scholars might look up to the more 'seasoned' ones, I am sure, this should go both ways and that part of our journey as sustainability transition scholars is to never stop listening, learning, and innovating.

EIST Journal

We are happy to introduce the most recent issue of EIST, published in Volume 50. The full list of papers is featured in the publication section of this newsletter.

Bernhard Truffer, Editor-in-chief

STRN Events

15th IST Conference, Oslo
June 16 – 19, 2024

The University of Oslo is looking forward to hosting this year's IST conference. Upon the closing of the abstract submission deadline, we received 630 submissions. Each abstract was reviewed and ranked independently by 2 reviewers. Overall, almost 40% of the submissions were accepted as full papers, 36% as speed talks, 7% as posters and 18% were rejected. The program will be designed with up to 10 parallel sessions in each slot.

Conference registration for participants with an accepted contribution will open early in April and close on June 1st.

On Sunday, June 16th, there will be a welcome day event for early career researchers and newcomers to the community. It will start around noon.

On Thursday, June 20th, NEST organizes a paper development workshop for early career scholars, which received more than 60 applications.

The conference organizers thank all track convenors, and NEST for co-organizing the conference and the STRN community for their interest and support.

More information and updates about the conference can be found on the conference website.

STRN / NEST Method School, Rotterdam
July 8 – 12, 2024

Applications now open! Deadline **April 15**.
If you are a PhD student or early career researcher, you can now apply for the 2024 Method School: **Transformative Research Unlocked**.

The event is hosted by the Design Impact Transition Platform and the Dutch Research Institute for Transitions (DRIFT), in collaboration with STRN and NEST.

Guided by the central question, "What is my role as a researcher in just sustainability transitions?", this year's edition of the method school takes you through different methodological approaches, offering participants a unique opportunity to better understand and cultivate their roles as transition researchers.

Read more and apply by visiting this link

NEST Conference, September 6 – 7, 2024

The Network for Early Career Researchers in Sustainability Transitions (NEST) is pleased to announce the **Call for Abstracts** for the 9th NEST Conference 2024 on the theme ***"Addressing Inequality and Sustainability Transitions."***

We invite all Ph.D. students, Masters students, and ECRs working on sustainability transitions to submit their work to the conference. To assure the inclusion, diversity, and participation of sustainability transition scholars worldwide, we proudly present a unique hub format this year, with conference being co-hosted **across three continents** by the

- Center for Research on Digitalization and Sustainability (CREDS), Inland Norway University of Applied Sciences, Norway
- Center for Sustainability Transitions (CST), Stellenbosch University, South Africa
- Monash Sustainable Development Institute (MSDI), Monash University, Australia

Please check the NEST website for further details.

9th NEST Conference 2024
Addressing Inequalities and Sustainability Transitions
NEST STRN

NEST Webinar Series 2024

With the NEST webinar series we want to make cutting edge Sustainability Transitions knowledge available to a greater community, and also to facilitate engagement between relevant established thinkers and early-career researchers.

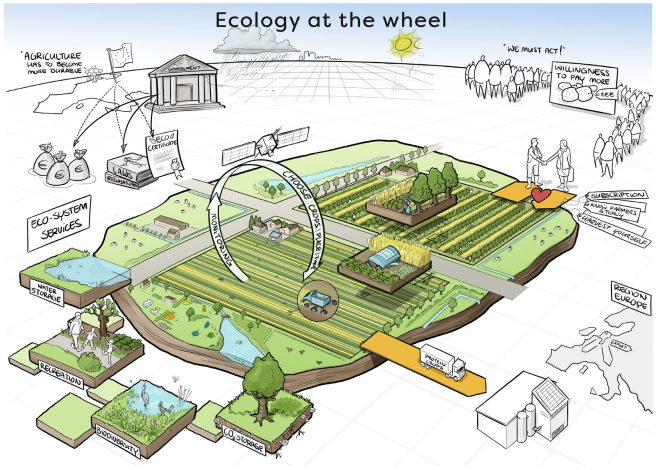
NEST is an international network established to cater specifically to the needs of early career researchers (ECRs) and doctoral candidates in the field of Sustainability Transitions.

Visit the NEST blog to learn more about the community, upcoming events or get in touch at https://transitionsnest.wordpress.com.

The 2024 series of speakers is already lined up. However, NEST is always open to suggestions from the STRN/NEST community about specific researchers they would like us to include as future speakers. If you have suggestions in this regard or any other queries, please don't hesitate to get in touch with Daniel Acheson at dacheson04@qub.ac.uk

Thematic Groups: News

Agro-Food Thematic Group



The Agro-Food (AF) Thematic Group thus far has mainly been active in organising sessions on AF transitions at IST conferences. After a foundational group meeting at the Utrecht conference last year, we have developed some initiatives to organise more frequent interactions and attract new members.

The first is to organise an international **workshop** on AF transitions under the auspices of STRN, to be held at the University of **Kassel, Germany, from 7-9 October 2024**. Further information can be found at: SISA-4 link. You can also find the CfP there. Proposals are due **April 2nd**.

The second is to organise monthly on-line seminars on AF transitions under the term 'Bridges'. The aim of these seminars is to bring closer the transition studies community that works on AF transitions with other research fields. The seminar series is planned to start in April and will initially run until June 2025. The programme will be posted shortly.

The third is that we will set up exchange on teaching on AF transitions, to foster the circulation of ideas and scholars among research groups and graduate programs. More to come this spring.

For futher information and suggestions contact:
Boelie Elzen, Wageningen University and Research (Netherlands): boelie.elzen@wur.nl
Marc Barbier, LISIS / INRAE (France): marc.barbier@inrae.fr

Transitions in Global South (TGS) Network

Transitions in Global South (TGS) Network is a network of scholars, investigating challenges and opportunities of sustainability transitions in the countries that are geographically located in the Global South (Latin America, Caribbean, Asia and Africa), and are often associated with "developmental issues": high inequality, poverty and severe consequences of climate change.

This year, scholars from the TGS network are hosting a track titled 'Innovation for sustainable transitions in the global south: Towards a practice and research agenda' at IST 2024. We will also organise a track at the NEST Conference, in September 2024.

With a focus to strengthen the network in Asia and Latin America, regional hubs in India and Brazil have been active in planning and executing various activities in these regions. If you would like to join the network or its regional hubs, or if you have news and activities to share with our network, do get in touch through our email: transitions.globalsouth@gmail.com

Geography of Sustainability Transitions Group

The GeoST group is entering its fifth year of existence. Interest in the topic continues to be very strong with several high-quality session tracks having taken place at international conferences like IST 2023 or the GeoInno conference in Manchester 2024.

We are currently preparing a GeoST special session track for IST 2024, which will provide an excellent opportunity to get an overview of the current state of research in the field.

We are also preparing a commentary paper that takes stock of the most promising conceptual interfaces between transition studies and economic geography, which is based on the GeoST webinar series and which will be presented at the IST conference.

If you have work in progress that you would like to present to a GeoST audience, please consider publishing it in our GEIST working paper series.

For further information, contact christian.binz@eawag.ch

New Projects

RUSTIK Project

RUSTIK (Rural Sustainability Transitions through Integration of Knowledge for improved policy processes) is a transformative four-year initiative, focusing on empowering rural communities and policymakers amidst growing social and ecological challenges. Prioritizing key transitions in socio-economy, climate change, and digitalization, the project addresses demographic change, economic diversification, and inequalities.

RUSTIK aims to enhance rural policy-making by analyzing adaptation needs, understanding rural functionalities, and addressing their potentials and challenges. Objectives include establishing a robust methodological framework for understanding rural areas, creating databases, and developing improved strategies for decision-makers. Anticipated outcomes involve comprehensive databases at regional and European levels, increased knowledge through innovative data collection, and refined policy approaches. The project, featuring Living Labs in 14 European Pilot Regions, takes an action-oriented, multi-actor approach to research rural diversity and societal transformations, contributing to holistic solutions for sustainable rural development and the well-being of communities.

Website

Generating or restricting change for sustainability transitions: A didactic study of the effects of emotions in sustainability-related learning processes (SUSTEMO)

Funded by the Research Foundation Flanders - Fonds Wetenschappelijk Onderzoek (FWO – 2024-27)

Emotions play a key role in sustainability transitions as people are required to change their habits, their views regarding the future, and because they might have to sacrifice their past ways of life. The resulting emotions can sometimes enable and motivate people, and sometimes stand in the way of them embracing change. They are also involved in people learning about sustainability initiatives and imagining alternative futures.

The SUSTEMO project addresses how emotions manifest in sustainability-related learning processes, for example in neighbourhood groups, activist circles, or higher education institutions. We study how the didactical work of educators and facilitators influences these emotions to either enable or restrict the learning process. We create empirical knowledge about how generative effects of emotions on sustainability transitions can be facilitated through the design of activities and through the interventions of educators.

Research team: Juliane Höhle – Katrien Van Poeck (PI) – Ghent University
Website

Other Events

ICSIS - International Conference of Sustainability, Innovation & Society, Itajaí/Brazil, June 24 - 27, 2024

Catalyzing Transitions for Sustainability: Exploring the Intersection between Social Innovation, Digital Transformation, and Sociotechnical Systems

The 1st edition of the International Conference will take place at the **University of Vale do Itajaí (Univali) in Brazil**. This edition will bring together various actors from the innovation and sustainability ecosystem. National and international researchers, academics, public officials, and entrepreneurs will participate, fostering a theoretical applied environment for addressing complex problems and sociotechnical and systemic changes.

The conference's central themes — sustainability, Innovation, and Society — will be addressed through lectures, panel discussions, case studies, and academic paper presentations involving different perspectives from

businesses, government, and universities.

The conference aims to create a conducive environment for collaboration, reflection, and proposing practical actions and research involving Transitions for Sustainability, Social Innovation, and Digital Transformation by investigating how established sociotechnical systems can evolve into more sustainable and socially just forms of production and consumption.

The target audience includes undergraduate and graduate students, professors, researchers, public officials, entrepreneurs, innovation, and economic and social development support organizations, startup participants, associations, and other stakeholders in the innovation ecosystem.

The majority of the sessions will be in Portuguese, however, some will be in English or Spanish.
Please submit your extended abstract by **April 22, 2024** (end of day).

Link for submission
Conference Website

Call for new thematic groups

We are reaching out to the community to propose new Thematic Groups. Thematic Groups (TGs) are self-organized spaces to foster collaboration and knowledge pertaining to a particular theme related to sustainability transitions. They are established and coordinated by STRN members who wish to engage with a particular thematic area on a regular basis and provide a forum and space for collective thinking on a particular subject.

We seek to accommodate emerging themes with which the transitions community wants to engage. Therefore, we intend to have a regular call for new thematic groups.

TGs are formed by at least five members of the STRN community who wish to gather around a certain sub-theme on a regular basis and present themselves as such to the network and beyond.

Activities of TGs may include the organization of workshops, conference sessions, special issues, writing research proposals, webinars, etc. TGs are visible on the STRN website with a general description, key activities, (a selection of) key publications and information on how others can get involved. Thematic groups are run on a voluntary basis, e.g., for a couple of years, and they can also be terminated again. A small amount of funding is available to support the thematic groups to help facilitate workshops and other key activities.

If you are interested in setting up a new TG, please put together a short application (max. 2 pages) to address the following:

1. Purpose of the TG
2. Relevance of the TG to STRN
3. How the TG will advance STRN
4. How it will foster greater collaboration within the STRN community
5. A plan for key activities and intended output
6. How the TG will support PhDs and Early Career Researchers
7. At least five initial members
8. Name and contact information of a dedicated contact person

The application will be reviewed by the STRN Steering Group. TGs are initially approved for three years. TG organizers and members of the Steering Group will then evaluate the benefits of continuation or termination.

If you have any questions or want to propose a TG, please reach out to sustainabilitytransitions@gmail.com

Publications

PhD Theses

Kuhmonen, I. (2023)
Imprisoned by the regime? Farmer agency and farm resilience in the making of a sustainable food system
Jyväskylä School of Business and Economics, University of Jyväskylä, Finland
Link

The majority of environmental impacts in food systems take place at the farm level, as a result of farmers' choices. Accordingly, farmers play a critical role in the transformation towards more sustainable food systems. At the same time, farmers are acting as price-takers in the value chains of food, which decreases their economic viability.
This thesis explores farmers' transformative capacities in the making of a sustainable food system. To do this, it builds on the analytical dualism between agency and structure, wherein the structural dimension was analysed through the concept of regime and farmers' transformative capacities were captured via the concept of resilience.
The methodology consisted of both quantitative and qualitative approaches, drawing upon two sets of nationally and regionally representative farmer surveys and a literature review on the history of the Finnish agrifood system.
The results indicate that the agrifood regime is currently in a life cycle phase characterised by rigidity and lock-in, which manifest at the farm level as a tightening cost-price squeeze and an increasing push towards economies of scale. These forces decrease the spectrum of farm-level economic viability. At the same time, the same forces that constrain farmer agency also contribute to sustainability problems in the food system. These forces originate from the characteristics of the contemporary food regime, especially fossil metabolism and desire for continuous growth. While farmers have the potential to be a transformative force for food system change, they currently lack both the resources needed for transformation and visions of its future direction.

Den Hartog, H. (2023)
Tensions and opportunities at Shanghai's waterfronts: Laboratories for Institutional Strategies toward Sustainable Urban Planning and Delta Design Transitions
Architecture and the Built Environment 13(18)
Link

How can the Global North oriented and welfare state rooted Sustainability Transitions theories be enriched with the Chinese and communist state rooted Ecological Civilization thinking that has been included in the Chinese constitution since 2007 to make it able to evaluate the making of the direct-controlled municipality Shanghai into an institutional frontrunner of sustainable transitions in urban planning and design with its prime waterfront as exemplary 'urban lab'?
Around this central question this dissertation examines how Shanghai's coastal and waterfront developments have changed over the past two decades under the influence of shifts in Chinese state capitalism towards what is called an Ecological Civilization. Two cases along the waterfronts of Shanghai – one on former docklands and one on Chongming Island – have been examined to test how both lines of thinking can enrich each other and if a sustainable transition can be done more efficiently and convincingly in a centrally controlled society than in a non-autocratic (liberal) society.
What lessons does the Chinese approach in Shanghai offer for elsewhere and how can different approaches and practices reinforce each other in the field of spatial planning and strategies for a sustainable transition? This dissertation emphasizes that ecological civilization thinking can offer hopeful starting points for sustainable transitions but can only work well if 'checks and balances' are included. It gives suggestions to improve the accessibility inclusivity and vibrancy of Shanghai's waterfronts and mitigate ecological degradation in the context of an urban delta.

Papers

EIST Volume 50

Emily Christley, Emrah Karakaya, Frauke Urban
Analysing transitions in-the-making: A case study of aviation in Sweden

María Rodríguez-Barillas, Laurens Klerkx, P. Marijn Poortvliet
Transformative policy mix or policy pandemonium? Insights from the Climate Smart Agriculture policy mix in Costa Rica

Jess Britton, Janette Webb
Institutional work and social skill: the formation of strategic action fields for local energy systems in Britain

Radhika Singh, Jampel Dell'Angelo, Nicholas Oguge, Collins Odote
The role of livelihoods in agrifood sustainability transitions

Annika Schröder, Thomas Klinger

Andersson, J., Hellsmark, H. (2024)
Directionality in transformative policy missions: The case of reaching net zero emissions in the Swedish process industry
Journal of Cleaner Production 437
Link

This paper proposes a directionality framework that highlights goal, sector and solution as key dimensions of transformative policy missions. The framework is used to investigate the directionality of process industry decarbonization in Sweden, by analyzing the orientation of projects supported by the major national funding program the 'Industry Leap' between 2017 and 2022. The results show that innovation activities (i) mainly aim to reduce fossil emissions rather than produce negative emissions, (ii) focus on the steel and chemicals industries, and (iii) engage mostly with carbon capture, electrification and hydrogen. This indicates that innovation activities are somewhat narrow and imbalanced, which suggests that policymakers should promote broaderexperimentation. The theoretical and empirical contribution of this paper supports academics, policymakers and other actors in understanding, evaluating and shaping the directionality of transformative policy missions.

Baatz, A., Ehnert, F., Reiß, K (2024)
Sites for sustainability transitions: the interplay of urban experiments and socio-spatial configurations in transforming habits
Urban Transform 6, 3
Link

Urban experiments intervene in selected sites to initiate transition processes. But how do the socio-spatial characteristics of these sites affect urban experiments and vice versa? We address this question by focusing on everyday habits and their reciprocal relationship with the socially produced space that surrounds them. Using conceptual analysis and by means of empirical examples, we consider which socio-spatial narratives, infrastructures and regulations facilitate or hinder urban experimentation. Rather than treating space as a pre-determined neutral stage, we conceptualise it as socially produced configurations that both affect interventions and are shaped by them. The transactional pragmatist perspective allows us to conceptualise how everyday habits can be disturbed and transformed in experimental processes. This notion is enriched by a socio-spatial categorisation of three aspects that co-constitute space. On this basis we develop an analytical framework to outline four possible dynamics arising from urban experimentation and the changing relations between actors and spaces. Empirical examples from the transdisciplinary research project Dresden – City of the Future: Empowering Citizens, Transforming Cities! illustrate the applicability of the framework. Our conceptual contribution provides a tool for analysing the socio-spatial dynamics of urban experiments. This sheds light on the agency of actors by conceptualising how they engage with socio-spatial configurations. We argue that further research on the role of space in urban experimentation is required to better explicate underlying socio-spatial understandings, while drawing on empirical data to test which socio-spatial concepts provide explanatory power for transition dynamics.

Baum, C. M., Low, S., Sovacool, N. K. (2023)
Coupling for climate intervention: Sectoral and sustainability couplings for carbon removal and solar geoengineering pathways
Technological Forecasting and Social Change, Volume 194
Link

Solar geoengineering and negative-emissions technologies are attracting greater attention as prospective ways to tackle and mitigate the worst impacts of climate change. Until now, such options have rarely been examined in a comprehensive manner. Rather, insofar as this has been done, research focused on one or the other, rather than considering a portfolio contribution and, more often, has taken a sectoral approach that looks at the options germane to the agriculture or energy sectors, but not in relation to climate change. Arguing for the need for a wider lens, the current article aims to understand the kinds of couplings and linkages most germane for the effectiveness of a particular option. In specific, we employed a novel dataset garnered from a large expert-interview exercise ($N = 125$) to conceptualize and consider crucial couplings to solar radiation management and carbon dioxide removal at many levels (across different sectors, differing dimensions of sustainability, productive or destructive impacts, and direct and indirect relationships). Our analysis thereby provides insights into the understanding of climate transitions by explicitly considering the most salient couplings in general as well as how, and to what extent, the various options relate to each other, as a portfolio for climate intervention, and together to climate mitigation and adaptation.

Bobrova, Y., Papachristos, G., Tikhomirova, S. V., Chiu, L. F., Coon, T. (2024)
Home for the Common Future (HCF): the use of home-meanings to promote domestic energy retrofit
Energy Research and Social Science 103358
Link

The promotion of energy retrofit to homeowners is an important policy strategy to reduce operational energy use in dwellings and mitigate climate change. Energy research and policy typically focus on the cognitive

(logical) aspects to motivate retrofit decisions, such as savings on energy bills and health considerations. However, this focus appears to have neglected the emotional aspects of how homeowners themselves make sense of the potential benefits of low-carbon dwellings.
To encompass both the emotional and cognitive aspects of energy retrofit decisions, the authors developed a home-meanings framework around the concept of perezhivanie (emotional and cognitive experience). We backgrounded our theoretical construction by drawing upon current literature of home-meanings and empirical insights from: (i) eighteen case studies, in ten of which homeowners achieved significant carbon emission reductions through retrofit activities, while in eight they did not; (ii) a stakeholder workshop (n = 36), representing various actors interested to advance domestic energy retrofit activities in the UK, e.g. industry, government, academia, intermediaries.
We analysed the data to identify positive experiences associated with low-carbon dwellings. These experiences are organised in five themes: (i) control over one's environment; (ii) Health and well-being & Happiness in everyday life, (iii) Climate concerns & Caring identity, (iv) Financial considerations & Future-resilience; (v) a full integration between and individual and their environment. The authors developed a Home for the Common Future (HCF) heuristic, which captures three out of five identified themes (ii–iv). We suggest that the heuristic can be used for promoting the benefits of low-carbon dwellings.

Cuesta-Claros, A., Malekpour, S., Raven, R.P.J.M., Kestin, T (2024)
Uncovering perspectives on SDG integration for university transformations
International Journal of Higher Education
Link

Purpose: This case study explores different perspectives on integrating the Sustainable Development Goals (SDGs) in universities to achieve university transformations. This study recognises that university actors think differently about the purpose of universities, hold diverse perspectives on the SDGs, and, thus, prefer specific types of SDG integration.
Design/methodology/approach: Using Q methodology, 29 participants from one university expressed their perspectives by sorting 50 statements covering different types of SDG integration. Statements were based on academic and grey literature on SDG integration in universities, and interviews with university actors from a previous study. After the sorting task, participants were interviewed to understand the reasons behind the placement of particular statements.
Findings: The study identifies three perspectives held by the study participants. Perspective 1 emphasises the value of the SDGs and supports a deep integration of the Goals in their university. Perspective 1 also advocates for incorporating the SDGs into the university's identity. Perspective 2 sees the university's purpose as more comprehensive than the SDGs; thus, the university should develop knowledge regardless of its relevance to the SDGs. This perspective supports a pragmatic integration of the SDGs – favouring actions that benefit the university without introducing significant changes. Finally, Perspective 3 argues that the university should approach the SDGs through social justice and empowerment lenses. This perspective also questions the suitability of the SDGs for universities, arguing that the SDGs fail to challenge current structures underpinning the unsustainability of the world.
Originality/value: Although previous studies have analysed diverse ways of understanding the SDGs in universities, to the best of the authors' knowledge, this study is the first to treat the SDGs as a governance framework of 17 goals and adopt a whole-institution approach to study universities.

Debnath, R., Creutzig, F., Sovacool, B. K. and Shuckburgh, E. (2023)
Harnessing human and machine intelligence for planetary-level climate action
Nature Climate Action 2
Link

The ongoing global race for bigger and better artificial intelligence (AI) systems is expected to have a profound societal and environmental impact by altering job markets, disrupting business models, and enabling new governance and societal welfare structures that can affect global consensus for climate action pathways. However, the current AI systems are trained on biased datasets that could destabilize political agencies impacting climate change mitigation and adaptation decisions and compromise social stability, potentially leading to societal tipping events. Thus, the appropriate design of a less biased AI system that reflects both direct and indirect effects on societies and planetary challenges is a question of paramount importance. In this paper, we tackle the question of data-centric knowledge generation for climate action in ways that minimize biased AI. We argue for the need to co-align a less biased AI with an epistemic web on planetary health challenges for more trustworthy decision-making. A human-in-the-loop AI can be designed to align with three goals. First, it can contribute to a planetary epistemic web that supports climate action. Second, it can directly enable mitigation and adaptation interventions through knowledge of social tipping elements. Finally, it can reduce the data injustices associated with AI pretraining datasets.

Ertelt, S. (2024)
Beyond predict and provide: Embracing sufficiency synergies in road freight

electrification across the European Union
Energy Research & Social Science, 111, 103498
Link

The challenge of aligning with the net-zero ambitions of the European Union necessitates a critical examination of the road freight transport sector, a pivotal contributor to global commerce and greenhouse gas emissions. Despite the sector's potential for electrification to mitigate emissions, the prevailing 'predict and provide' planning approach may inadvertently reduce this low-carbon transition to mere technological substitution, neglecting deeper intrinsic transport issues. This perspective critiques the 'predict and provide' approach and advocates for the adoption of 'sufficiency-oriented planning'. It presents a comprehensive, interconnected approach, challenging not only the technology in use but also the foundational principles of transport demand. Furthermore, it explores the broader implications of this multi-system transition for the energy sector. The perspective consequently underscores the necessity of a paradigm shift in planning for road freight transport electrification for the sector to genuinely contribute to sustainability objectives and not risk diminishing the transformative potential of this transition.

Fischer-Kowalski, M., Krausmann, F., Pichler, P. P., Schaeffer, R. K., Stadler, S. (2023)
Great transformations: Social revolutions erupted during energy transitions around the world, 1500–2013
Energy Research & Social Science, Volume 105
Link

Over the past 500 years, the transition to fossil fuels has been accompanied by sociopolitical upheaval, revolution, and counterrevolution in countries around the world. Previous research found that social revolutions occurred during energy transitions in a limited sample of 38 countries. This research expanded the investigation to examine the relationship between shifts in the energy base of societies and transformative sociopolitical change in 66 countries since 1500, and to address new questions about these transitions. We found that two-thirds of all 52 identified revolutions occurred during the initial phase of the transition to fossil energy use (between 0.7 and 7.2 GJ/cap/year), a "critical energy transition phase" that lasted 42 years on average. This "critical energy transition phase" can be understood as an arena where social and economic adversaries met to contest past and future relations, a contest that resulted in turmoil, violence, and transformative social change. We also assess the impact of revolutions and counterrevolutions on the speed of energy transitions, finding that revolutions might accelerate transitions and repressions might slow them down. We also find that, in our sample, colonial rule slowed the pace of energy transitions for colonized subjects. These findings are significant because similar sociopolitical developments may be associated with the current energy transition in response to catastrophic climate change, a product of the previous transition.

Geels, F.W. and Gregory, J. (2024)
Explaining varying speeds of low-carbon reorientation in the United Kingdom's steel, petrochemical, and oil refining industries: A multi-dimensional comparative analysis and outlook
Energy Research & Social Science, 111, 103488
Link

Accelerated decarbonisation of steelmaking, oil refining and petrochemical industries is essential for climate change mitigation. Drawing on three longitudinal case studies of these industries in the UK, this synthesis article makes a comparative analysis of their varying low-carbon reorientation speeds. The paper uses the triple embeddedness framework to analyse five factors (policy support, international competition, financial health, technical feasibility, corporate strategy and mindset) that explain why UK oil refineries have in recent years been comparatively the fastest in their low-carbon reorientation and UK steelmakers the slowest. We find that policy support has been more beneficial for refining and petrochemicals than for steel, although recent government deals with steelmakers addressed this imbalance. International competition has been high for steel and petrochemicals and comparatively lower for refining (meaning that decarbonisation costs are less detrimental for international competitiveness). Financial performance has comparatively been worst for steel and best for oil refining, which shapes the economic feasibility of low-carbon options. Hydrogen and carbon-capture-and-storage are technologically feasible for refining and petrochemicals, while Electric Arc Furnaces are technically feasible for steelmakers but face wider feasibility problems (with scrap steel supply, electricity grids, and electricity prices), which is why we question the recent government deals. Corporate strategy and perceptions changed in oil refining, with firms seeing economic opportunities in decarbonisation, while steelmakers and petrochemical firms still mostly see decarbonisation as a burden and threat. The paper ends with comparative conclusions, a discussion of political considerations, and future outlooks for the three UK industries, policy, and research.

Gothár, E., Schanz, H. (2024)
Dynamics in the evolution of circular sourcing strategies: Evidence from German frontrunners sourcing for recycled plastics
Journal of Cleaner Production, Volume 435
Link

Firms' circular sourcing strategies are essential for the transition to a circular economy as they enhance circularity both within individual firms and across industries. A key barrier to the implementation of such strategies is that many approaches still offer a static perspective on resource use without addressing its evolutionary characteristics and dynamic interdependencies over time. Based on the assumption that companies' strategic procurement decisions on recyclate markets show temporal patterns depending on the development of these markets ("marketness"), the dynamics in the complex cause-and-effect structures of circular procurement strategies are analysed longitudinally with the help of causal loop diagrams. Employing a comparative case-study design with the example of German frontrunners sourcing recycled plastics, the paper addresses three recyclate markets at various stages of development, ranging from the emerging market of recovered plastic litter, through the developing market of plastic recyclate from mixed post-consumer packaging waste, towards the well-established market of recycled deposit bottles. The results reveal ideal-typical longitudinal patterns of company leaders' strong commitment to sustainability, facilitated by flexible organisational structures, significant investment in product development, sound supplier relationship management and brand building to sway consumer preferences towards circular products, indicating that market-shaping activities are key in long-term shifts towards circular market transitions. By understanding the dynamics of circular sourcing and their relationship with the development stage of recyclate markets, the study sheds light on potential governance measures to scale-up plastic recyclate markets for a circular plastics economy. It concludes that overall dynamics point to a steady development of firms' circular sourcing strategies and a rapid growth in recyclate application, involving complex challenges of resource circularity that call for carefully targeted regulatory policies.

Halfon, S. and Sovacool, B. K. (2023)
Pluralistic Collaboration in Science and Technology: Reviewing Knowledge Systems, Culture, Norms, and Work Styles
Science, Technology, & Human Values, 48(5)
Link

This paper challenges the language of "interdisciplinarity," suggesting "pluralistic collaboration" as a better alternative. Interdisciplinarity, team science, and transdisciplinarity frame academic and problem-focused collaborations narrowly, overemphasizing epistemology, downplaying extra-disciplinary divides and nonacademic collaborators, and either ignoring or psychologizing individual-level phenomena. We first paint a picture of the tensions and divides that exist in pluralistic collaborations, in three dimensions—epistemic, cultural, and normative—using a series of literature reviews to simultaneously map and extend these dimensions. We then introduce and explore a fourth dimension—academic work styles. Individual level considerations of collaboration in the literature generally rely on psychological types. We explore what a more sociologically oriented approach to individual dynamics within collaborations would look like by identifying and exploring four general academic work styles: isolationist, imperialist, pragmatist, and pluralist. We conclude by emphasizing and reflecting on pluralistic collaboration. Pluralism exists along a range of dimensions, and pluralizing or homogenizing different dimensions (pluralizing pluralism) can produce diverse effects on the outcome of interdisciplinary collaboration. While we thus advocate for pluralism along a greater range of dimensions when addressing complex problems, we suggest that over-pluralization can be a problem.

Hasankhani, M., van Engelen, J., Celik, S., & Diehl, J.-C. (2024)
Unveiling complexity of hydrogen integration: A multi-faceted exploration of challenges in the Dutch context.
Journal of Cleaner Production, 434, Article 139927
Link

As the transition to sustainable energy intensifies, hydrogen emerges as a pivotal medium in mitigating climate change and improving energy security. While its applicability across various sectors is undeniable, its integration into established energy systems presents multifaceted challenges. This study investigates the complexities of integrating hydrogen into the Netherlands' energy systems. Beyond technological advancements, the successful design and rollout of a hydrogen supply chain require coordination and collaboration among a myriad of stakeholders. Through a mixed-methods approach, this study combines findings from a broad literature review, policy document analyses, evaluation of 59 field projects, and engaging dialogues with 33 key stakeholders from different sectors. This investigation led to the identification and categorization of key players in the Dutch hydrogen sector, revealing their interconnected roles and the challenges encountered in the hydrogen integration process. The study further categorized the identified challenges faced by stakeholders into five core domains: technical, infrastructural (including supply chain), socioeconomic, environmental, and institutional, with associated factors. Prominent challenges include transportation infrastructure upgrades, high initial costs and scalability, effective storage methods, safety and cybersecurity measures, storage and distribution infrastructure, security of supply, and public acceptance. This study contributes to the hydrogen integration discourse, offering insights for academics, industry, and policymakers. Its detailed stakeholder analysis, holistic

categorization of challenges across five domains, and a stakeholder-centric approach grounded in real-world dialogues offer applicable frameworks beyond its primary context. In this vein, it guides future research and decisions, and its approach is adaptable for different regions or sectors, emphasizing comprehensive transition strategies.

Hawxwell, T., Hendriks, A., Späth, P. (2024)
Transformative or incumbent futures? How the future of mobility is imagined in sustainability transitions research
Futures
Link

How actors relate to the future has long been considered important in research on the governance of transformations towards sustainability. Recent contributions have explored the politics at play in the 'making' of futures and the forming of collective expectations. Building on the concept of socio-material incumbency and integrating academic discussions which appreciate the politics of future-making, we consider the forming of collective expectations as a process through which prevailing socio-material arrangements are challenged and reproduced. We illustrate this perspective by exploring how mobility futures are imagined in sustainability transition research. We investigate academic contributions which explicitly articulate possible, plausible and/or desirable alternative mobility arrangements and consider the extent to which and how contributions challenge and reproduce hegemonic socio-technical orders.

Henry, M., Kirchherr, J., Raven, R.P.J.M., Hekkert, M. (2024)
Bottom-up dynamics in circular innovation systems – the perspective of circular start-ups
Journal of Industrial Ecology. 1–19
Link

The concept of circular economy (CE) is proposed to lead humanity toward a sustainable future. Public authorities increasingly build on CE narratives. The progress of private sector actors is key to enable more circular resource flows. Still, the world falls far short from becoming circular and large-scale implementation of CE in actual problem–solution spaces is scarce. This study sheds light into the external strategies of circular start-ups (CSUs) in building an adequate socio-institutional embedding for circular business models (CBMs) and puts the findings in the context of CE and sustainability transformations research. CSUs are a distinct group of CE-oriented actors that build and implement CBMs wholistically and from scratch. Thereby, they can directly and indirectly contribute to the creation of circular innovation systems. This study defines the common CE mission of CSUs, sets it in context of respective socio-political CE missions, and scrutinizes the roles that CSUs adopt to drive systemic CE implementation. We observe that CSUs' strategic interventions go further than only novelty creation. This article proposes and elaborates on four roles that CSUs adopt: *conveners*, *reinforcers*, *pioneers*, and *champions*. The roles differ according to the CSU business models, stakeholders, the institutional elements that are addressed, as well as the directionalities that CSUs set. The findings are discussed considering the governance, policies, and strategic management of various directionalities in which CE innovation develops. It sheds light on inadequacies and limitations for bottom-up CE innovation in existing norms and cognition, policy, and network governance.

Joshi, N., Agrawal, S., Ambury, H. et al. (2024)
Advancing neighbourhood climate action: opportunities, challenges and way ahead
npj Clim. Action 3, 7
Link

Cities are emerging as key sites for action on climate change. Within cities, urban neighbourhoods are increasingly taking leadership in addressing local effects of climate change through mitigation and adaptation programs. Bottom-up action on climate change through neighbourhood scale programs presents opportunities in terms of getting the community to partner and participate in climate action. However, neighbourhood scale programs often run into challenges in terms of limited participation, impact and resources to keep the programs running. In this paper, we advance the literature on the opportunities and challenges of neighbourhood scale climate action. We do so by analysing three neighbourhood scale programs that address climate action in Canada and in Australia. We adopt online workshops as a research methodology where volunteers from the three programs share their experiences of opportunities and ways of overcoming challenges of neighbourhood climate action. Our findings illustrate that collaborative governance between the city and the neighbourhoods, incremental community building and consolidating local resources are important for advancing neighbourhood climate action. This paper adds to the thin body of knowledge on neighbourhood scale climate action and presents ways of overcoming the challenges of bottom-up climate action.

Kaiser, A., Samuel, R. & Burger, P. (2024)
Toward a low-pesticide agriculture: bridging practice theory and social-psychological concepts to analyze farmers' routines
Sustainability: Science, Practice and Policy, 20:1
Link

Agricultural crop protection (CP) today is under pressure not the least because it strongly relies on pesticides that negatively affect the environment and human health.

Policy attempts to induce a transition toward low-pesticide CP have had limited success so far. While the literature has examined these difficulties primarily in terms of farmer decision-making, recent research has begun to highlight the routine nature of farmers' practices as a key aspect of the inertia of prevailing CP practices. Here we propose a framework that bridges practice theory (PT) and social-psychological concepts. We illustrate the relevance of this framework by gauging the relative roles of individual and structural factors as well as mechanisms that (de)stabilize pesticide-use practices. Our analysis is based on data from a survey conducted among Swiss farmers (n = 652). Using structural equation modeling, we find that structural factors are more strongly associated with pesticide use than individual factors. Although farmers' personal norms to limit the use of pesticides are activated by values, self-efficacy, and social norms, they do not translate into behavior. Structural factors such as local production conditions and knowledge sourced from private agricultural advisory services appear to inhibit the mediating role of personal norms with respect to pesticide use. We conclude that reconfiguring such structural elements of CP practices may help to disrupt routines and eventually lead to a low-pesticide agriculture. Our findings also highlight the benefits of integrating PT and social-psychological concepts to advance our understanding of routines in CP.

Kanger, L. (2024)
When the types do not make sense: Seven lessons to improve typology-building for energy transitions research
Energy Research & Social Science, 107: 103360
Link

The field of sustainability transitions studies is characterized by the proliferation of different typologies. However, many of these, including highly influential ones, have not been formulated according to any explicit criteria. This can be problematic because such typologies may be based on partially overlapping or redundant categories and systematically miss out on certain dimensions, without even being aware of this. As a result, even attempts to subject such typologies to systematic empirical testing can still remain biassed and therefore reproduce the problems of the initial conceptualization. To exemplify these issues, this paper conducts a literature review of typology-building practices in transitions studies and performs a formal analysis of three influential typologies related to intermediaries, energy justice, and power. Drawing on insights on typology formation from political science, the analysis focuses on whether the categories of each typology are mutually exclusive and collectively exhaustive. The notion of property space is then used to contrast the difference between the actual and logically implied scope of each typology. Based on the analyses, the paper offers seven lessons for improving typology-building in the study of energy and other transitions.

Kloo, Y., Nilsson, L. J., Palm, E. (2024)
Reaching net-zero in the chemical industry—A study of roadmaps for industrial decarbonisation
Renewable and Sustainable Energy Transition, Volume 5
Link

Striving to mitigate climate change, the European Union has adopted net-zero greenhouse gas emissions as a target for 2050. In this paper, European chemical industry roadmaps from the past six years are assessed and compared to uncover how the industry envisions its role in the transition to net-zero emissions. The roadmaps are assessed in terms of ambition level, technology and feedstock strategies, investment needs and costs, agency and dependency on other actors, as well as timeline and concretion. Although net-zero pathways are often drawn out in the roadmaps, some also choose to emphasize and argue for less ambitious pathways with emission reductions of only 40–60 %. The roadmaps vary widely in terms of the importance they assign to mechanical and chemical recycling, switching to biogenic carbon and carbon dioxide as feedstock, electrification and hydrogen, and carbon capture and storage. A commonality though, is that low-tech or near-term mitigation pathways such as demand reduction, reuse or material efficiency are seldom included. High investment needs are generally highlighted, as well as the need for policy to create enabling conditions, whereas the agency and responsibility of the chemical industry itself is downplayed. Our analysis highlights that the chemical industry does not yet have a strong and shared vision for pathways to net-zero emissions. We conclude that such a future vision would benefit from taking a whole value chain approach including demand-side options and consideration of scope 3 emissions.

Kotir, J. H., Jagustovic, R., Kessler, A., Reynolds, M., Papachristos, G., Zougmore, R.B., Ouedraogo, M., Ritsema, C. J., Aziz, A. A., Johnstone, R. (2024)
Field experiences and lessons learned from applying participatory system dynamics modelling to sustainable water and agri-food systems
Journal of Cleaner Production 434, 140042.
Link

Achieving the objectives of sustainable development in water and agri-food systems requires the utilisation of decision-support tools in stakeholder-driven processes to construct and simulate various scenarios and evaluate the outcomes of associated policy interventions. While it is common practice to involve stakeholders in

participatory modelling processes, their comprehensive documentation and the lessons learned remain scarce. In this paper, we share our experience of engaging stakeholders throughout the entire system dynamics modelling process. We draw on two projects implemented in the Volta River Basin, West Africa, to understand the dynamics of water and agri-food systems under changing environmental and socioeconomic conditions. We outline eight key insights and lessons as practical guides derived from each stage of the participatory modelling process, including the pre-workshop stage, problem definition, model conceptualization, simulation model formulation, model testing and verification, and policy design and evaluation. Our findings demonstrate that stakeholders can actively contribute to all phases of the system dynamics modelling process, including parameter estimation, sensitivity analysis, and numerical simulation experiments. However, we encountered notable challenges, including the time-intensive nature of the process, the struggle to reach a consensus on the modelled problem, and the difficulty of translating the conceptual model into a simulation model using stock and flow diagrams – all of which were addressed through a structured facilitation process. While the projects were anchored in the specific context of West Africa, the key lessons and insights highlighted have broader significance, particularly for researchers employing PSDM in regions characterised by multifaceted human-environmental systems and where stakeholder involvement is crucial for holistic understanding and effective policy interventions. This paper contributes practical guidance for future efforts with participatory modelling, particularly in regions worldwide grappling with sustainable development challenges in water and agri-food systems, and where stakeholder involvement is crucial for holistic understanding of the multiple challenges and for designing effective policy interventions.

Kuhl, L., J. C. Stephens, C. Arriaga Serrano, M. Perez-Lugo, C. Ortiz-Garcia and Ellis, R. (2024)
Fossil fuel interests in Puerto Rico: Perceptions of incumbent power and discourses of delay.
Energy Research & Social Science 111: 103467.
Link

This study explores perceptions of fossil fuel interests and the role narratives of fossil fuel obstruction play in slowing down the renewable energy transition in Puerto Rico. We analyzed interviews conducted with 56 “energy actors” engaged in Puerto Rico's energy system about their visions of the system's future and perceptions of the influence of different actors in promoting change or reinforcing the status-quo. The analysis also examined the use of discourses of delay in participant interviews using a framework proposed by Lamb et al. (2020). Our interviews revealed that a wide range of energy actors perceived obstruction by fossil fuel interests as shaping Puerto Rico's energy transition, and used discourses of delay to describe Puerto Rico's energy transition, but also employed narratives that countered this obstruction and resisted fossil fuel interests. The results depict the conflicted nature of Puerto Rico's energy transition: on the one hand there was widespread agreement across a wide range of actors that the future of Puerto Rico's energy system would eventually be renewable based, and at the same time, there were significant doubts that a renewable transition could or would occur. The complex interplay among perceptions of the influence of fossil fuel interests, discourses of delay, and narratives of resistance and community power offers insights into why renewable energy deployment has been slow in Puerto Rico, despite the possibility of a rapid transition after Hurricane Maria devastated the energy system in 2017 and ambitious energy policies were passed.

Kungl, G (2024)
Challenges of the current discourse on incumbent firms in sustainability transitions
Energy Research & Social Science, 108, 103367
Link

In this viewpoint article, I argue that, as the view on incumbent firms has broadened over the years, a number of challenges have emerged that hamper the discourse on the role of incumbents in sustainability transitions and the advancement of theoretical knowledge. These challenges arise from (1) different – often implicit – definitions of incumbents and reference ontologies; (2) insufficient consideration of sectoral boundaries and inter-sectoral dynamics; (3) unclear criteria for the interpretation of the role of incumbents for the sustainability transition process under study; (4) the non-consideration of capitalism and capitalism theory when analysing the role of incumbent firms in sustainability transitions. I illustrate these challenges with examples from transition research and formulate potential solutions.

Libertson, F. (2024)
Misalignments of theory and practice: Exploring Swedish energy utilities' understandings of energy justice, flexibility capital, and just energy transitions
Energy Research & Social Science, 111
Link

Ensuring that the existing social inequalities of the current energy system are not transferred to the new system is crucial for the transition towards a low-carbon economy. This is the domain of energy justice—a normative and evaluative framework that has been applied extensively throughout the past decade for understanding the perspective of disadvantaged energy users. However, less attention has been paid to the

perspectives of supply-side actors, such as energy utilities, and their understanding of energy justice. The purpose of this study is to explore how Swedish energy utilities perceive themselves and their roles in a just energy transition. The research scrutinizes their understanding of energy justice and user flexibility. To answer these questions, 24 semi-structured interviews with representatives of prominent actors in the energy sector actors were analyzed by use of narrative analysis. The results constitute four archetypes—the System Operator, the Analyst, the Flexibility Advocate, and the Entrepreneur—each of them placing unique emphasis on social issues and the role of user flexibility in future energy systems. These diverging views on a just energy transition should not be regarded as mutually exclusive but rather as complementary since a just transition should encompass all perspectives. However, this study concludes that to remedy the misalignment between the theory and practice of energy justice, the energy sector would benefit from adopting roles that to a greater extent emphasize social equity. Future research should also investigate the extent to which energy utilities may be held accountable for energy injustices.

Moallemi, E.A., Hall, A., Leith, P., Miller, M., Sperling, F., Raven, R.P.J.M., Frantzeskaki, N., Palmer, J., Battaglia, M., Bruce, J., Hebinck, A., Haan, F. de, Godde, C., Grigg, N., Boylan, S., Szetey, K., Chakori, S., Moti, Z., Onyango, E., Stafford-Smith, M., Whitten, S., McMillan, L. (2024)
Shortcuts for accelerating food system transitions
One Earth. 7
Link

In light of ongoing global challenges of health, climate change, and food security, there is urgent need to transform our food systems. Here, we call for stakeholders to leverage collective wisdom garnered from more than two decades of sustainability transitions research into developing and implementing systemic approaches to shortcut theory to action and accelerate the transformation of global food systems.

Müller-Hansen, F., Repke, T., Baum, C. M., Brutschin, E., Callaghan, M. W., Debnath, R., Lamb, W. F., Low, S., Lück, S., Roberts, C., Sovacool, B. K., Minx, J. C.(2023)
Attention, sentiments and emotions towards emerging climate technologies on Twitter
Global Environmental Change, Volume 83
Link

Public perception of emerging climate technologies, such as greenhouse gas removal (GGR) and solar radiation management (SRM), will strongly influence their future development and deployment. Studying perceptions of these technologies with traditional survey methods is challenging, because they are largely unknown to the public. Social media data provides a complementary line of evidence by allowing for retrospective analysis of how individuals share their unsolicited opinions. Our large-scale, comparative study of 1.5 million tweets covers 16 GGR and SRM technologies and uses state-of-the-art deep learning models to show how attention, and expressions of sentiment and emotion developed between 2006 and 2021. We find that in recent years, attention has shifted from general geoengineering themes to specific GGR methods. On the other hand, there is little attention to specific SRM technologies and they often coincide with conspiracy narratives. Sentiments and emotions in GGR tweets tend to be more positive, particularly for methods perceived to be natural, but are more negative when framed in the geoengineering context.

Niewiadomski, P. and Brouder, P. (2024)
Sustainability Transitions in Tourism
Special Issue in Tourism Geographies
Link

Although the 'sustainability transitions' agenda has developed over the last 20 years to become a well-established inter-disciplinary research field, the dialogue between research on sustainability transitions and the sustainable tourism research field has been minimal. Neither has the sustainability transitions agenda encompassed the tourism production system, nor have tourism scholars sufficiently utilised the advancements made in research on wider sustainability transitions. The aim of this special issue is to help bridge this gap and encourage a more enhanced and nuanced exchange of ideas between these two distinct bodies of work. The special issue consists of a guest editorial, eight research papers and one commentary. It has attracted contributions from many internationally renowned tourism researchers. It also includes a commentary from Jonathan Köhler – a well-established sustainability transitions scholar. As such, it is the first collective attempt to bring research on sustainable tourism and the sustainability transitions field closer together. While the sustainability transitions literature can help move the research on sustainable tourism in new, previously unexplored directions, tourism can offer the sustainability transitions agenda a new, rich empirical space which sustainability transitions scholars have not yet visited.

Piotr Niewiadomski & Patrick Brouder
From 'sustainable tourism' to 'sustainability

transitions in tourism'?
Link

Jonathan Köhler
Commentary: transitions research and sustainable tourism
Link

Thomas Magnusson, Solmaz Filiz Karabag, Karin Wigger & Göran Andersson
Sustainability transitions in tourism: on the transformation of a fragmented sector
Link

David Flood Chavez, Piotr Niewiadomski & Tod Jones
From niches to regime: sustainability transitions in a diverse tourism destination
Link

Irma Booyens, Gijsbert Hoogendoorn, Kristy Langerman & Kate Rivett-Carnac
Path creation for an electricity transition in South African tourism
Link

Piotr Niewiadomski & Victoria Mellon
Transitioning towards sustainable tourism in the Outer Hebrides: an evolutionary investigation
Link

James Tops & Machiel Lamers
Just tourism transitions? Sustainability policy interventions and implications on Boracay, Philippines
Link

Shirley Nieuwland
Urban tourism transitions: Doughnut economics applied to sustainable tourism development
Link

Timothy Wilkinson & Tim Coles
Do tourists want sustainability transitions? Visitor attitudes to destination trajectories during COVID-19
Link

Solène Prince, Dimitri Ioannides, Anke Peters & Tatiana Chekalina
Tourists' perceptions of wind turbines: conceptualizations of rural space in sustainability transitions
Link

Nobre, F.S. (2024)
Unleashing Virtuous Cycles of Sustainable Development Goals and Well-Being
Business and Society Review
Link

This article advances sustainability towards a new logic that favors the flourishing of Sustainable Development Goals (SDGs) and well-being from North to South. It presents a Global Dual-Perspective (GDP) and a Dynamic Equilibrium Framework (DEF) that inform sustainability, management, and international business with a paradoxical view of the SDGs and a strengthened analysis that outlines the role of multinational enterprises (MNEs) in addressing the SDGs within and across the North–South. This article reveals that organizations will effectively unleash virtuous cycles of SDGs and well-being when confronting and juxtaposing environmental, health, social, economic, and law-oriented goals. Furthermore, virtuous cycles will be more successful when splitting and integrating short- and long-term conflicting goals within and across the North–South to fuel systemic resilience and sustainable development.

Onyeali, W., Schlaile, M.P., & Winkler, B. (2023)
Navigating the biocosmos: Cornerstones of a bioeconomic utopia
Land, 12(6), 1212
Link

One important insight from complexity science is that the future is open, and that this openness is an opportunity for us to participate in its shaping. The bioeconomy has been part of this process of "future-making". But instead of a fertile ecosystem of imagined futures, a dry monoculture of ideas seems to dominate the landscape, promising salvation through technology. With this article, we intend to contribute to regenerating the ecological foundations of the bioeconomy. What would it entail if we were to merge with the biosphere instead of machines? To lay the cornerstones of a bioeconomic utopia, we explore the basic principles of self-organization that underlie biological, ecological, social, and psychological processes alike. All these are self-assembling and self-regulating elastic structures that exist at the edge of chaos and order. We then revisit the Promethean problem that lies at the foundation of bioeconomic thought and discuss how, during industrialization, the principles of spontaneous self-organization were replaced by the linear processes of the assembly line. We ultimately propose a bioeconomy based on human needs with the household as the basic unit: the biocosmos. The biocosmos is an agroecological habitat system of irreducible complexity, a new human niche embedded into the local ecosystem.

Papachristos, G., Papadonikolaki, E., Morgan, B. (2024)

Projects as a speciation and aggregation mechanism in transitions: Bridging project management and transitions research in the digitalization of UK architecture, engineering, and construction industry

Technovation, Volume 132

Link

Sociotechnical transitions are mostly seen in the literature as processes where actors and technologies in small niches peripheral to an organizational field, accumulate momentum, scale up, aggregate, and eventually bring about large-scale regime change. Foundational examples include the British transition from sailing ships to steamships and the American transition from traditional factories to mass production. Herein lies a paradox, transitions concern large scale system change for example transition to electric cars or renewable energy, but large-scale options for technological change driven by incumbents have received less attention in transitions research. This is an important opportunity for transition research to draw on the literature of project management research on large-scale projects. We bridge transitions research and project management research by exploring speciation and aggregation from both perspectives. We illustrate how this bridge may be instantiated drawing on published research and interviews on six megaprojects that have been instrumental in the digital transformation of UK construction: (i) the Channel Tunnel Rail Link, (ii) Heathrow Terminal 5, (iii) London Olympics, (iv) Crossrail, (v) Thames Tideway and (vi) High Speed Two. The speciation of digital technology seeds the process of aggregation and UK industry transition which is driven by incumbents at the organizational field core and ripples outward to its periphery. This is a reverse process to the one mostly considered in transition research where change initiates in small niches peripheral to an organizational field and propagates until it eventually brings about large-scale change to its core.

Papadonikolaki, E., Morgan, B., Papachristos, G. (2023)

Megaprojects as niches of sociotechnical transitions: The case of digitalization in UK construction

Environmental Innovation and Societal Transitions 48, 100728

Link

Transitions are processes of systemic change where niches peripheral to a sociotechnical regime accumulate momentum, scale up and eventually transform its core. In contrast to this dominant narrative in transitions research, infrastructure systems exhibit the reverse process as change propagates from the regime core to its periphery. We explore this under-researched process in the case of digitalization in UK construction. We analyse six UK megaprojects that span more than 30 years as a single longitudinal embedded case, and show how the adoption of digital technologies driven by regime incumbents, seeds the processes of technology adaptation, aggregation, and system transformation. The adoption of digital technologies by incumbents is necessary to cope with megaproject scale and scope. Their adaptation to technology instigates organizational level change that starts at the regime core, accumulates with each project and makes these changes ripple across the industry and transform it.

Plummer, P., Andersson, J., & Lennerfors, T.T.(2024)

Foraging for development: An analysis of the Swedish wild berry innovation system

Agricultural Systems 216

Link

This paper analyses the structure, functions and directionality of the Swedish wild berry innovation system and draws implications for ongoing efforts to develop the value chain. The study is based on 18 semi-structured interviews, participant observations and a range of secondary sources. It uses an analytical framework based on the agricultural innovation systems approach and pays specific attention to reflexivity, directionality and non-human materiality. The paper finds that the Swedish wild berry innovation system is fragmented as incumbent berry companies are absent from efforts to develop and reconfigure the value chain. This is due to partly conflicting objectives among actors, which highlights a need for broader governance networks to navigate trade-offs and enable the commercialisation of new solutions. The analysis also shows that successful innovation likely hinges on institutional change, particularly when it comes to efforts to improve labour conditions for migrant workers.

Pons-Seres de Brauwer, C. (2024)

Acceptance dynamics of innovation diffusion: A heuristic framework for analysing actor reorientations in sustainability transitions

Energy Research & Social Science

Link

The accelerated decarbonisation of energy systems entails a drastic increase in the diffusion rate of renewable energies. The adoption of ambitious policy mixes to this end faces a number of key challenges related to the resistance of multiple actors against the disruptive changes that such an acceleration entail. Policy-driven innovation diffusion efforts will thus require the sustained support and commitment from numerous stakeholders holding conflicting positions over disruptive

processes of renewables' innovation diffusion. Yet despite its multistakeholder and processual character, empirical analyses on the social acceptance of renewables' innovation remain skewed towards static examinations of one specific actor group anchored in one particular point in time and location, omitting the interrelations across acceptance dimensions inherent in multistakeholder processes of innovation diffusion. To address these shortcomings, this paper introduces a novel heuristic framework on the acceptance dynamics of innovation diffusion processes as a key element to guide the examination of actor inertia and reorientation dynamics – depth, breadth, speed and directionality – over the diffusion of environmental innovations. Based on suggested framework applications, the paper outlines several implications for future research cutting across social acceptance and actor reorientations within sustainable energy transitions.

Reiß, Kristin; Seifert, T. L.; Artmann, M (2024)
Initiating, innovating and accelerating edible cities. A case study based on two transition experiments in the city of Dresden (Germany)
Urban Ecosystems
Link

Civic transition experiments targeting sustainable food production increasingly engage with edible cities aiming at providing free food on public urban spaces. To deepen the understanding regarding how transition experiments can build urban transformative capacities, this paper presents a transdisciplinary case study on two civic edible city initiatives and their measures to cooperatively initiate, innovate, and accelerate edible cities in Dresden (Germany). We identified the two key action areas “civic participation” and “cooperative area activation” covering ten key transition activities to illustrate the variety and content of a transformation towards an edible city. Based on expert interviews and document analyses, we evaluated their process progression by linking research from urban ecology with transformation science. By visualizing its quantitative results, common and distinct patterns of the edible city initiatives could be made visible. Overall, we found that the level of activity is highest in the key action area of “citizen participation”. In this context, both transition experiments had different but specific foci in terms of their key transition activities (i.e. education, activation of stakeholders), whereby activities related to civic empowerment and social cohesion were lacking in both cases. To re-shape narratives pertaining to land access, food production, and participation under the principles of justice, we suggest that transition experiments related to “civic participation” and “cooperative area activation” must be approached together. Our systematic assessment can then enable civic transition teams to strategically identify common goals that need to be prioritized for initiating, innovating, and accelerating urban edible commons.

Roysen, R.; Bruehwiler, N.; Kos, L.; Boyer, R.; Koehrsen, J. (2024)
Rethinking the diffusion of grassroots innovations: An embedding framework
Technological Forecasting & Social Change, v. 200
Link

This paper conceptualises the ways grassroots innovations (GIs) influence sustainability transitions. While research on GI diffusion tends to use the three-pathway model (replication, scaling up and translation), this paper rethinks GI diffusion through the lenses of an embedding framework. We illustrate this framework by applying it to the empirical case of ecovillages in the Global North and South. The results show that GIs become embedded in wider society through different dynamics: expansion, reframing, circulation of knowledge, shifting material arrangements and replication. The embedding framework brings clarity to diverse dynamics of diffusion and is particularly able to grasp the cultural, cognitive, economic and environmental impacts of GI initiatives.

Sareen, S., Smith, A., Gantioler, S., Balest, J., Brisbois, M.C., Tomasi, S., Sovacool, B., Torres Contreras, G.A., DellaValle, N. and Haarstad, H (2023)
Social implications of energy infrastructure digitalisation and decarbonisation
Buildings and Cities, 4(1)
Link

Digitalisation provides opportunities to decarbonise energy and, simultaneously, address social exclusion and inequality—but it is unclear whether and how these opportunities are realised. Three case studies investigate whether ongoing energy infrastructure digitalisation processes are accommodating commoning or enclosure, using a continuum of commoning versus enclosure practices to examine this question. Multi-sited fieldwork throughout the period 2021–22 is used to compare sectoral transitions in three European mid-sized cities: mobility in Bergen (NO), solar generation in Brighton & Hove (UK) and smart electric meters in Trento (IT). Semi-structured and narrative expert interviews (N = 66), a mix of structured (N = 134) and semi-structured (N = 49) citizen interviews, citizen focus groups (N = 17), seminars (N = 2), participatory workshops (N = 4), and extended participant observation reveal multiple and contradictory processes of commoning and enclosure. Decarbonisation and digitalisation are proceeding unevenly, with tendencies of enclosure and missed opportunities to achieve commoning of energy infrastructure for public benefit. Opportunities are identified to enable commoning pathways in ongoing twin transitions.

Schlaile, M.P., Hector, V., Peters, L., Bäuerle, L., Smith, B., Hilt, A., & Graupe, S (2024)
Innovation amidst turmoil: A SenseMaker study of managerial responses to the COVID-19 crisis in Germany
Journal of Innovation Economics & Management, 43(1), 285-318
Link

We present the results of an exploratory study of transformation processes in "wicked problem situations", faced by 623 German managers due to the COVID-19 crisis during summer 2021. Our study draws on a fruitful combination of sustainability transitions research, complexity theory, cognition in economics, meme theory, and sensemaking by using the SenseMaker® software platform as a data collection and analysis tool on patterns of meaning in managerial self-signification and interpretation of their own decisions. We contribute to current interdisciplinary debates by presenting an empirical study on sensemaking during the COVID-19 pandemic that uncovers the narrative patterns of managers during uncertain decision situations. Our results suggest that while new habits have emerged and human ingenuity and creativity is acknowledged, participants of our study appear to lack a strong vision of a sustainable future beyond green growth and the dominant techno-economic paradigm.

Spatan, S., Peter, D., Thiele, G., Wolfram, M., Ehnert, F., Schulz, M., Scherbaum, S., Surrey, C. (2024).
Epistemic Outsiders: Unpacking and Utilising the Epistemic Dimension of Disruptive Agency in Sustainability Transformations
PLOS Sustainability and Transformation.
Link

Disruptions (systemic disturbances) are crucial to initiate and accelerate sustainability transformations of large-scale social systems (be they socio-ecological, socio-technical, or socio-institutional). Their emergence, characteristics and effects strongly relate to the role of agents who aim to disrupt and transform the status quo, and which thus possess what we call disruptive agency. In this paper, we highlight the epistemic dimension of disruptive agency in social transformations, first by conceptualizing disruptive agents as epistemic outsiders with respect to the social system that they intend to disrupt and transform, and second by connecting this conceptualization to notions of belief, social practices, social networks, discourses, or institutions. We identify five advantages of this approach. Firstly, it informs and conceptually enables various promising interdisciplinary avenues to explore and potentially influence transformative change towards sustainability. Secondly, an epistemic conception of disruptive agency offers a key for an integrated analysis of the individual and collective levels of agency involved in sustainability transformations. Thirdly, the notion of epistemic outsiders conceptually connects agent positions across system boundaries that are understood to be of crucial importance for sustainability transformations respectively (e.g., "niche innovators" or "regime intermediaries") but which lack an integrated understanding. Fourthly, an epistemic perspective additionally highlights the changing requirements and challenges resulting in two principal stages of transformations unfolding over time, namely before/after a new epistemic layout is shared by a majority of agents. Finally, the above features allow to derive and conceive of new intervention formats and strategies.

Sovacool, BK, Brugger, H., Brunzema, I., Dańkowska, A., Wemyss, D., Vernay, AL., Betz, R., Avelino, F., de Geus, T., Dembek, A., Duetschke, E., Hielscher, S., Iskandarova, M., Müller, L., Musiolik, J., Ranville, A., Schleich, J., Stasik, A., Strumińska-Kutra, M., Winzer, C., Wittmayer, J. and Rogge, KS. (2023)
Social innovation supports inclusive and accelerated energy transitions with appropriate governance
Nature Communications Earth & Environment 4
Link

Accelerating energy transitions that are both sustainable and just remains an important challenge, and social innovation can have a key role in this transition. Here, we examine the diversity and potential of social innovation in energy systems transformation, synthesizing original mixed methods data from expert interviews, document analysis, social innovation experiments, a representative survey, and an expert survey. Based on a thematic analysis of these data, we advance four key findings: (1) the diversity of social innovation in energy is best understood when recognizing core social practices (thinking, doing, and organizing) and accounting for changes in social relations (cooperation, exchange, competition, and conflict); (2) governance, policy networks, and national context strongly shape social innovation dynamics; (3) processes of social innovation are implicated by multidimensional power relations that can result in transformative changes; and (4) social innovation in energy generally has strong social acceptance among citizens, benefits local communities and is legitimized in key community and city organizations. We discuss an agenda for 9 future research directions on social innovation in energy, and conclude with insights related to national context, governance, and acceleration.

Sovacool, B. K., Furszyfer Del Rio, D., Zhang, W. (2023)
The political economy of net-zero transitions:

Policy drivers, barriers, and justice benefits to decarbonization in eight carbon-neutral countries
Journal of Environmental Management, Volume 347
Link

This study examines the political economy of decarbonization in eight countries over the period 2000 to 2021/2022 that have already achieved a national net-zero transition. These countries are Bhutan, Suriname, Panama, Guyana, Comoros, Gabon, Madagascar, and Niue. It utilizes an analytical method of a rich, interdisciplinary and systematized literature review integrated with thematic analysis. For each of these countries, the study examines the drivers and political motivation behind net-zero progress, including the timeline of events; the barriers and challenges that had to be overcome; and the benefits of decarbonization and its impacts on equity and justice. The main objectives of the study are to broaden the evidence base on low-carbon transitions beyond often and even overstudied countries that are Western, Educated, Industrialized, Rich, Democracies, or WEIRD countries, and to offer new empirical data on the strategy of energy policies in the real world, examining the first eight countries to achieve net-zero success in the modern era. It finds that all eight countries used a similar mix of nine policy interventions involving land use, renewable energy, and waste management. Common barriers included vulnerability to the effects of extreme climate events either in the form of natural disasters (i.e. landslides and floodings) or ecosystems degradation (i.e. ocean acidification, coastal erosion and forests loss). Despite these barriers, achieving net-zero emissions positively impacted marginalized communities by providing a more equitable distribution of climate benefits, mitigating adverse health effects and reducing social inequalities, particularly in low-income areas.

Sovacool, B. K. (2023)
Expanding carbon removal to the Global South: Thematic concerns on systems, justice, and climate governance
Energy and Climate Change, Volume 4
Link

Conversations on how to assess, innovate, and develop policies for carbon removal are for now largely confined to the Global North – reflecting a concentration of academic interest (and concern), innovation capacity, early funding initiatives, and policy path-dependence in climate, energy, and land-use. However, future population growth, emissions trajectories, and even concentrations of economic (and technological power) are shifting to the Global South. Here, after explaining the positionality of the author, this paper summarizes the perspectives and concerns of 90 key academics, technologists, and policy entrepreneurs on expanding carbon removal assessment, innovation, and policy beyond early foci within (northern) Europe, the US, Japan, and Australia. It explores how concerns about systems (coupling and infrastructure deployment), justice (equity and inclusion), and governance (including pledges, funding, and offsets) markedly differ across Global North and Global South dynamics. It discusses how such issues intersect with each other, and concludes with insights for research and policy.

Stephens, J. C (2024)
The dangers of masculine technological optimism: Why feminist, antiracist values are essential for social justice, economic justice, and climate justice.
Environmental Values 33(1): 58-70.
Link

Responding to the climate crisis requires social and economic innovation—because climate change is a symptom of patriarchal capitalist systems that are concentrating—rather than distributing—wealth and power. Despite the need for social and economic innovation, technological innovation continues to be prioritized in climate policy and climate investments. This paper reviews the dangers of technological optimism in climate policy by exploring its links to patriarchal systems and masculinity. The disproportionate focus on science and technology emerges from and reinforces “climate isolationism,” a term that I use to refer to the common framing of climate change as an isolated discrete, scientific problem in need of technological solutions. This framing stems from assumptions of patriarchal white-male conceptions of privilege and power that evolve from a colonizing and controlling mindset. Masculine technological optimism is dangerous because it is exclusive, it minimizes the need for social change and social innovation, and it is ineffective in catalyzing inclusive societal transformation. This paper argues that embracing feminist, antiracist values is necessary for transformative climate policies, economic justice, and climate justice.

Stock, R., Sovacool, B.K. (2024)
Blinded by sunspots: Revealing the multidimensional and intersectional inequities of solar energy in India
Global Environmental Change, Volume 84
Link

Studies of energy transitions have historically lacked a holistic, multi-scalar and multi-site accounting of social and environmental impacts of projects. Scholars increasingly point to the need for integrated studies that highlight impacts at various stages of lifecycles and scales of governance in the normative pursuit of energy justice. In this study, we examine the social and environmental inequities within the solar PV value chain

in India from multiple scales using an original dataset and comparative case study approach, including multiple site visits and embedded ethnography. We utilized a mixed methodological approach to data collection that included household surveys (n = 120), semi-structured interviews (n = 43), focus group discussions (n = 6) and naturalistic observation (n = 9 site visits over 24 days) across the states of Uttar Pradesh, Karnataka, Rajasthan, Delhi and Tamil Nadu at six different locations. We buttress recent work examining solar injustices from a 'whole systems' perspective, taking a multidimensional approach through an intersectional lens. Drawing from fieldwork and the literatures of energy justice and political ecology, we ask: What are the social and ecological impacts or equity concerns of each stage of the solar photovoltaic value chain in India? At each solar node, there are demographic, spatial, interspecies and temporal inequities occurring. Demographic inequities include resource dispossession, loss of livelihoods and hazards exposure for marginalized groups. Spatial inequities include distributional injustices for capital and electricity, rural land enclosures and substandard infrastructure. Interspecies inequities include ecosystem contamination, habitat destruction and imperiling wildlife. Temporal inequities include time burdens placed on marginalized groups, multi-decadal time horizons for inequitable projects to pay off and the long-term degradation of the environment. We conclude by reflecting on the stakes of solar development in India and offering policy recommendations that could engender a more equitable solar sector and chart future research agendas.

Ullman, A. N., & Kittner, N. (2024)
Are global efforts coordinated for a Just Transition? A review of civil society, financial, government, and academic Just Transition frameworks
Energy Research & Social Science, 108, 103371
Link

Considering the rapid pace of phasing out fossil fuels from the economy, Just Transitions are an essential component of any energy strategy to build acceptance and reconciliation from fossil fuel damages. However, the range of competing visions that define a "Just Transition" complicates Just Transition policymaking and evaluation. With increased application of Just Transition frameworks, academic groups should consider the role of government, financial institution, and civil society frameworks for Just Transition policies. This analysis reviews 75 non-academic Just Transition documents published by non-governmental organizations, governmental figures (intergovernmental, national, sub-national, and governmental organizations), multilateral institutions, development banks, think-tanks, and private enterprises. Just Transition frameworks are highly varied in their scope and design, demonstrating the diversity surrounding the meaning behind "Just Transition" across stakeholders. Proposed economic and social policies vary across non-academic Just Transition frameworks, particularly between types of organizations/actors. Many critical issues raised by policymakers and non-governmental organizations are not found in conceptual reviews of academic Just Transition frameworks–including prominent focus areas on circular economy, waste and water management, human rights, and decolonization strategies. Furthermore, the broader Just Transitions literature reviewed expands greatly upon topics pertaining to low-carbon transitions in Latin America and Sub-Saharan Africa, including rights for informal workers in fossil fuel industries and small and medium-sized enterprises, that are often understudied in academic reviews. Future research studies should co-evolve local, indigenous, civil society, and private sector knowledge on Just Transitions to build stronger context-specific research contributions that ensure increased participation in the transition to a low-carbon society.