

# Track 5 - Are inter- and trans-disciplinarity living up to their promise in RRI?

(Harald Throne-Holst, OsloMet, Matthias Kaiser, UiB, Christian Wittrock, OsloMet)

Friday 30<sup>th</sup> 8:30-10:30 – Session 1 – Chair: Harald Throne-Holst

Friday 30<sup>th</sup> 13:20-15:00 – Session 2 – Chair: Harald Throne-Holst

## Session 2

Chair: Harald Throne-Holst, OsloMet, Norway.

## Abstracts

### *Extradisciplinarity: Incremental innovation within the disciplinary structure*

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Much has been made of the potential for interdisciplinarity and transdisciplinarity to spawn innovation. But these concepts fall short of capturing the richness and variation across the many kinds of productive relationships that can exist among disciplines. Understanding interdisciplinarity to be the synthesis of knowledge between two or more fields (Klein) and transdisciplinarity to be the application of knowledge across multiple disparate fields (Scriven), we found that neither of these concepts adequately characterizes the nascent, inherently cross-disciplinary field of data science. Instead, we develop the theory of extradisciplinarity to capture what is happening on the ground in the emergent field of data science. An extradiscipline is a field that exists to facilitate the exchange of knowledge, skills, tools, and methods from an indeterminate and fluctuating set of disciplinary perspectives while conserving the boundaries of those disciplines. The idea of the extradiscipline captures the way data science is conceived by relatively junior actors who are intimately involved in learning, teaching, and advancing the methods and tools that make up an emergent data science culture. These actors characterize data science as: a practice grounded in specific disciplinary applications and highly sensitive to disciplinary contexts; a relational arrangement in which data science does not exist separate and apart from scientific domains but rather emerges at their intersection through collaboration and interaction; and an adaptive pursuit that entails improvisation, customization, and exploration on the part of its practitioners. We argue that this extradisciplinary vision represents a quotidian, day-to-day reality of data science. This can be juxtaposed against a transdisciplinary vision peddled by relatively powerful boosters of data science that portrays the field, in contrasting terms, as transcendent with regard to its agnosticism for disciplinary context, appropriative in its relationship to the acquisition of data from various disciplines, and impositional in the way that the tools and methods of data science order and shape the data and questions of

disciplines. Whereas the vision of data science as a transdiscipline developing paradigmatically novel methods and tools that promise to be universally impactful is a seductive one that has been successful at raising money and institutional support for this new field, the quotidian reality of data science as an extradiscipline offers a more humble and conservative view. Extradisciplinarity, instead, leads to incremental change within a stable disciplinary structure through the support of craft-like skills, collaborative practices, and idiosyncratic problems. These findings—reported in Tanweer & Steinhoff (2024)—have implications for how we understand the evolution of a consequential new field, and for how we theorize the role of disciplinarity’s many permutations in innovation and knowledge production.

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### *How sustainability and responsibility are integrated to the project life cycle*

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It is increasingly important to consider both sustainability and responsibility in any kind of work and projects. Here I am discussing mainly research projects, but the same topics and processes may be general in all types of projects.

In research projects, we have at least three main categories to be considered: research goals or targets, research procedures and underlying principles and values. Recently, both research funders and research organizations have referred often to Sustainable Development Goals (SDGs) as a meaningful objective for any kind of study. Research projects need to consider the positive impact and contribution to the specific sustainability goals as well as identify potential negative impact at the same time. In addition, projects should build up the so-called mitigation procedures to avoid or decrease those negative effects. These SDGs should be identified in the very early phase of the planning of the project and should be monitored and validated during the project.

For a proper, authentic and useful consideration of SDGs, one should strictly follow principles (reliability, honesty, respect and accountability) of research integrity and implement the Responsible Research and Innovation (RRI) approach to the project. RRI approach emphasizes broader ethical perspective and consideration beyond the legal approach, which leads to the stronger stakeholder engagement and anticipation. Diverse stakeholders should be included in the process, which calls for specific and customized capacity building activities and the mutual learning process to enable authentic multi-stakeholder approach aiming at co-created common goals and more empowered

participants. Transparency, trust, dialogue and open mind will be key factors in the process. If research project partners (including citizen scientists) respect each other, handle research environment in respectful manner and respect both social and natural environment, research partners will plan and implement research in a way that it will produce better results: results that are based on reliable research methods and process; results that will be presented honestly and partners feel accountable to their work and activities. Thus, research integrity principles are the foundation, which also ensures the excellence and quality of the research.

To ensure that these principles, values and procedures are well integrated into the whole research process in a way that enable better contextualization of them, I here present a SEEED -model. SEEED model will guide the project to consider sustainability and responsibility from the planning phase till the end of the project and beyond. Meaningful contribution to the sustainability is the starting point for the project planning. No significant harm -principle should be guiding the project when balancing between positive and negative impacts. At this very first phase it is important already carefully consider ethical, legal and regulative issues, which may already lead to the no-go decision at this point. As said, ethical consideration goes beyond the legal approach and will add more reflective thinking from multiple perspectives to the project plan. Engagement of right and suitable partners and stakeholders is extremely important for the successful planning and implementation of the project. At this stage it is important to evaluate the sustainability risk based on country, industry and organization profile: the project requires enhancing sustainability remarkably if other risks are also considered quite high. Already in the planning phase project makes the first assessment of the evaluation methodology both in the process and product level: what kind of indicators and measure validate the project work properly. Finally, the dissemination and exploitation of the project work should be taken seriously as only a strong sharing of both good and bad experiences will accumulate the knowledge for the research community, as well as ensure that the resources will be used responsibly, also in the future.

### ***Inter- and transdisciplinary input for establishing an Intergovernmental Panel on Food Security and Sustainability***

**Matthias Kaiser**, University of Bergen, Norway

The world of politics and academia has learned to listen carefully to the recommendations of the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as important bodies to stimulate policy. They provide target measures for reaching goals on climate change and biodiversity which help to formulate appropriate measures of states. They also specify indicators for reaching the overall goals of the Sustainable Development framework (SDGs). The question arises, though, whether the world needs a similar effort in regard food security. The COVID-19 pandemic was the just the latest reminder how the global food system affects various other systems as for instance climate change and biodiversity. But public health, economy, social cohesion, politics, and cultural values are similarly affected. Most assessments of our food systems agree that radical changes in our food system are required if we want to reach the SDG targets. This talk presents the recommendations

recently advanced by the Academia Europeae to establish an Intergovernmental Panel on Food Security and Sustainability (IPFSS) and explains why a global target of a Human Tropical Level (HTL) of 2.0 might be a way to go.

### ***Reflections on Incorporating RRI Goals into Online Violence Prevention Research***

**Dante Michael Della Vella**<sup>1</sup>, Rajendra Akerkar<sup>1</sup>, Carol Dralega<sup>2</sup>, Torborg Igland<sup>2</sup>

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The global rise of violence-inducing behaviour such as hate speech in social cyberspace is a major cause of concern [NOU 2022, 2023]. This complex, multi-layered, and dangerous behaviour often channelled through mis- and disinformation has been identified as one of the leading crises of our lifetime. According to the World Economic Forum report, the hate speech crisis is projected to worsen if not addressed through transformative, responsible, and innovative research [WEF2024]. Hate speech is a crisis for the whole of society and we will have a significantly better chance of tackling this challenge if different societal actors are engaged in the co-construction of innovative solutions. Responsible Research and Innovation (RRI) means that societal actors work together during the whole research and innovation process to better align both the process and its results, with the values, needs and expectations of our society [EC, 2012].

To address hate speech, we should take a systemic, transparent and responsible approach to carefully understand how hate speech evolves, particularly in times of disasters, when disinformation triggers polarisation and discrimination towards marginalised groups. Without “responsibility by design”, transparent studies, and close collaboration between public authorities, NGOs and human rights institutions, research organisations, civil society organisations, and citizens it will be exceedingly difficult to handle such online information disorder [Stahl, 2021].

To address this issue in Norway, the transdisciplinary research project – SOCYTI is developing a cloud-based, real-time detection system capable of evaluating multilingual text and images from social media posts for hateful content on a larger scale than ever previously possible. SOCYTI is an ambitious effort intended to help communities prevent the spread of hate speech online [SOCYTI, 2022]. In addition to social science, computer science, ethics, and legal analysis, the project draws on local expertise and thus strives to be transdisciplinary. The project will lead to technological solutions developed in compliance with Norwegian societal values, fundamental rights and applicable legislation, including in the area of privacy and data protection as well as ensuring explainability, accountability and promoting transparency of technological solutions that society can trust.

We believe in the importance of reaching out to stakeholders from all distinct parts of society because hate speech prevention is the responsibility of the whole society. There are different perspectives on the issue, and our work has potential utility and consequences for many kinds of people. Thus it is important that our data and results meet open science goals

to be accessible to those same people. To involve non-academics in the project, we have utilised three main strategies so far: in-person workshops, surveys and interviews. All stakeholder-experiences are unique to their organisational mandate, these experiences (continue to) guide our research trajectory as they provide multi-dimensional knowledge our research seeks. The surveys are seeking informants who may have been subjected to hateful speech online or have close networks that may be vulnerable. The workshop(s) are also arenas for promoting dialogue for building partnerships and synergies between stakeholders.

In this presentation we will reflect on the opportunities and challenges we are facing in meeting RRI goals while working on the SOCYTI project such as communicating with diverse stakeholders, sustaining community engagement, and utilising the experiences of vulnerable communities. We will further discuss how we can build on our specific experience to go beyond the existing RRI discourse in design and implementation of the SOCYTI system.

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