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Leverage Points 2019: a transdisciplinary conference, inspiring change

From February 6 to 8, 2019, Leuphana University of Lüneburg hosted the first ever Leverage Points *conference on sustainability research and transformation. On behalf of the whole* Leverage Points *project team from Leuphana University, members of the team take stock with colleagues from the* Bridging the Great Divide *project from Leuphana University, and the NaWis network.*

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***Leverage Points 2019:* a transdisciplinary conference, inspiring change**
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The conference *Leverage Points 2019* attracted 500 people from all over the world, discussing interventions to create and enable radical changes towards sustainability. The 70 sessions covered the themes of rethinking knowledge, restructuring institutions, reconnecting to nature, systems thinking, transformative research practice, and emergent themes. Keynote speakers from a range of disciplines, within and outside of academia, joined us to offer their own perspectives. Through the three days, radical change emerged as the ethos of the conference, which was reflected in both the format and atmosphere of the event, and in the impact to participants. The conference originated from within the *Leverage Points* project, run by Leuphana University, funded by the Volkswagen Foundation. The project was inspired by Donella Meadow's essay on intervening in systems (Meadows 1997). During the past five years, 15 postdoctoral and PhD researchers, and eight professors conducted a joint project on this topic at Leuphana University. The conference was the final part of this project.

A radically different conference

Our experience throughout the project was that genuine transdisciplinary collaboration, on emotive topics, can be challenging and therefore benefits from a supportive and reflexive environment. We sought to provide such an environment throughout the conference, even as the number of participants rose from 150 to 500! We wanted to create opportunities and structures to support a transdisciplinary conference, providing a venue that has diverse and energizing forms of interaction, exchange and knowledge production.

We built the conference on three pillars: 1. By creating a welcoming and engaging atmosphere, we tried to make people feel instantly at home and to spark different formats to exchange. 2. Accessibility was vital to us, as we wanted to create a diverse and inclusive setting, for instance, by providing an array of means to support parents with small children. 3. Diverse hierarchies – our students made this conference happen, and they were the engine of the conference, both in terms of active participation as well as organization. In particular, they helped link the conference knowledge together by acting as rapporteurs from the sessions.

One huge goal of our conference was to encourage big picture thinking – in a large conference, it is easy for sessions to just happen, and for attendees to become passive in this process. We tried to synthesize and integrate findings from across the entire event. Our graphic facilitators depicted outcomes in keynotes and plenaries, thereby channeling smaller session outcomes towards the guiding questions we set for each day (figure 1, p. 56). Hence we were able to create feedback loops of information, and used the outputs from sessions to connect to the plenary sessions, as well as the graphic interconnections wall. >

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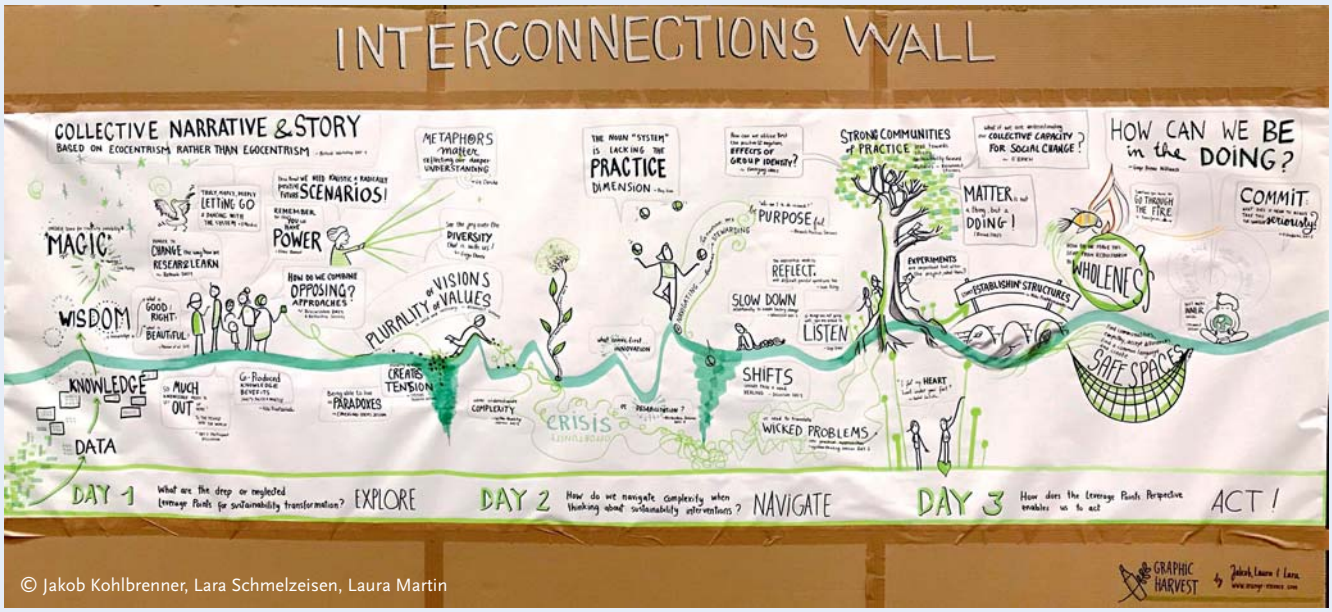

FIGURE 1: Graphic harvest results at the *Leverage Points* conference.

A feature of the conference was space for participation: all sessions were designed to allow participation from the audience. Each session had time for presentations, followed by either a world café or a panel discussion, with plenty of time allocated for discussion. In the open common spaces, we created discussion corners through the design of the space, where people could post topics they wanted to discuss. We provided a *Twitter* wall and a place to collect thoughts on post-it notes. By employing a technology called *Sli.do* in the plenaries we allowed groups in the audience to discuss and display their thoughts on the big screen.

Our efforts in creating such an engaging atmosphere were rewarded in the attendee's reactions and participation. The knowledge harvesting testified to the energy people put into the conference. Most attendees were prompted to reflect on their own actions and those that they make collectively as members of their broader social and research communities. We have also recognized that the conference triggered debates in many participants about lifestyle choices and mind-sets. This was particularly encouraging to us as the original concept of leverage points highlights such mindset shifts as deep leverage points that can serve as pivotal towards a more sustainable world.

As a collective, participants called for more radical yet also more reflective science, which demands fundamental changes in the way we construct research projects and academia in general. Repeatedly, we heard calls for long-term thinking in universities, and to overcome the knowledge-action gap, creating mutual learning between science and society.

Reflecting on the impact of transdisciplinary research – the *NaWis* session and beyond

The conference provided specific opportunities to reflect not only on the practice of transformative research, but also on the impact assessment of transdisciplinary research for sustainable development. To enable research institutions in this emerging field to build capacity, such as the member organizations of *NaWis* (University of Kassel, Leuphana University, IASS Potsdam and Wuppertal Institute for Climate, Environment and Energy), it is essential that research outcomes are relevant for science as well as stakeholders. In a session organized by the *NaWis* network, the IASS presented a framework to capture the impacts of its research activities on society and academia. This framework can be operationalized into empirical measurement and enhances conventional performance measurements in academia, such as peer-reviewed publications, citations per scientist and year, or third-party funding. The framework thereby takes the suggestions of the *German Council for Science and Humanities (Wissenschaftsrat)* into account, which highlights that "tackling Grand Societal Challenges has developed to become an additional science-policy goal that complements the approach of promoting basic research as a driver of progress and of supporting innovation processes" (Wissenschaftsrat 2015, p. 28).

Another systematic and more comparative approach to assess the impacts of transdisciplinary research was presented at the conference by members of the *TransImpact* project, funded by the German Federal Ministry of Education and Research (Bergmann et al. 2016). The *TransImpact* team analyzed the impacts of about 20 completed transdisciplinary projects and synthesized overarching quality standards for transdisciplinary research. Moreover, the project *Modes of Sustainability-related Research in Comparison (MONA)*[1], funded by the Deut-

1 *www.leuphana.de/fileadmin/user_upload/PERSONALPAGES/_mno/newig_jens/files/MONA_summary.pdf*

sche Forschungsgemeinschaft (DFG) at Leuphana University of Lüneburg, also investigated a comparative perspective and presented quantitative results from a meta-study at the conference. Following the model of Clark (2007), sustainability science aims for *use-inspired research*. While the academic impact of *basic research* is often assessed through measures like the number of citations per million Euros funding, the societal impacts of *use-inspired research* have also to be assessed on a "societal outcomes index". This index refers to the depth of societal impact (self-reported but also externally checked) on five dimensions: recognition, discussion, test, application, and continuation.

Mobile Solution Workshop

The conference venue offered the opportunity to test a new tool for transformative research practice, the *Mobile Solution Workshop*. It was developed at Leuphana University, based on existing *Decision Visualization Environment* concepts (John et al. 2018). *Decision Visualization Environments* support research, planning and decision-making at the science-society-policy interface.

Similarly, the *Mobile Solution Workshop* aims to bridge the gap between understanding complex challenges and specific local solutions. However, in contrast to existing concepts our approach enables stakeholders to interact and improve complex models and case study approaches by utilizing five big screens controlled by a mobile computer and tablets. The *Mobile Solution Workshop* was part of the open common space where conference attendees could witness and participate in breaking down and interacting with solutions into comprehensible steps on the screens (figure 2).

In the *Mobile Solution Workshop,* solutions are not pre-defined by scientists, but developed with stakeholders in a workshop setting guided by the visualization of data in order to empower stakeholders in the decision-making process, and to subject models to practical testing. During the conference attendees competed in creating scenarios to reduce carbon emissions in an agent-based mobility transition model developed by scientists from the *Global Climate Forum,* Berlin. Participants were able to create scenarios on the tablets and immediately see the effects of different combinations of policies, events and investment options. Overall, the *Mobile Solution Workshop* represents one of the numerous diverse approaches for interactive knowledge production presented at the conference, aiming to break new ground to overcome the knowledge-action gap. Many people felt empowered by interacting within the model we used as an example, creating visualizations of complex system dynamics. The feedback from the conference highlighted the need for such radical approaches, and exemplified how new interactive formats can not only allow for new interaction between science and society, but also add new components to a conference setting.

FIGURE 2: The *Mobile Solution Workshop,* presented at the *Leverage Points 2019* conference.

Take-home message

We heard from many participants and also from our team how empowered and inspired people felt at this conference. By bringing the different branches of the sustainable science community together for a few days, the potential and challenges of this emerging arena in science became more tangible. Many participants felt encouraged in their radical thinking, and discussed ways to develop it.

Simultaneously, the need to recognize linkages to other fields of research, and to further address the knowledge action gap, became clearer. Overall, the meaningfulness of the leverage point concept became evident, not least because many participants' paradigms were challenged and mind-sets shifted. To this end, the conference served as a leverage point for its attendees.

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