

PANEL #1

Performance from a transdisciplinary perspective

One objective of the project “Sensing & Sensibility – Organizing Human and Non-Human Cooperation” is to map existing research within the University of Siegen to establish a university-wide research focus on promoting the design of useful, meaningful, and humane technology (“Sensing & Sensibility”; S&S). To do so, we offer panel discussions centered on crucial concepts, such as performance, satisfaction, or accountability.

Panel #1 was the first event in this series, right after the start of the project in October 2020. Moderated by Shadan Sadeghian and Peter Burggräf, the panel revolved around the concept of ‘performance’ from a transdisciplinary perspective. We invited four speakers to provide short impulses from the perspective of engineering, history, operations research, and marketing. This initiated a lively discussion among the more than 40 participants that ranged from focusing on ‘performance’ as a notion of efficiency captured by quantitative metrics (an engineering perspective) to interrogating performance in terms of individual and social aspects of acting with and through technology on a qualitative level.

From an engineer’s point of view Prof. Martin Manns discussed performance, ethics, and data protection in the workplace. For him, performance is the efficiency of completing a task in the shortest possible time, at minimal cost, and with the desired quality. He presented his research on motion detection 1) to plan workplaces according to body movements of workers to avoid long term costs, 2) to foresee and ensure human-robot collaboration at work, and 3) to provide digital haptic training in environment with gamification.

The required data collection involves observation and sensing of humans, which tackle several challenges such as ethical ways of data collection, data protection and anonymization, and secondary effects such as disease diagnosis during data collection.

A contrasting view on performance from the perspective of history and cultural studies was presented by Prof. Angela Schwarz drawing on the example of the practice of technology-tracked walking. She described ‘performances’ as recurring social forms of theatricality that comprise different elements and practices of representation – such as rituals – that make aspects of material embodiment, cultural dynamics and processes of exchange visible. Additionally, she explored how the late 1990s ‘performance turn’ instrumentalized the focus on performance to research staging practices from within political and societal realms. Special attention is given to the subjective agency of actors to stage and shape their cultures, identities, gender roles, and bodies. This aspect of subjective performative agency brought to the fore the research focus on the specific situations and thereby implicit situated, multiple meanings.

Prof. Hanna Schramm-Klein explored performance from the perspective of marketing in general and market orientation research in particular. The focus here is laid on ‘sensing’ understood broadly as capturing consumer behavior, and ‘sensibility’, perceived as ongoing, pro-active adjustments to changing consumer demands by companies and governmental policies. Prof. Schramm-Klein described this research field with the special attention to consumers. Here, the term ‘performance’ is understood through aspects of...

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...quality, 'theatrical' branding power, or customer relationship. Organizations are looking for new tools to optimize their performance strategies, including the use of automation. In addition, consumers are making these performance demands on themselves, for example by questioning the ethics of their consumer behavior.

Finally, Prof. Marc Goerigk discussed how his research in optimization calls for a plural understanding of performance. He pointed out that, while efficiency can be used as a metric for performance, it should not be the only one. He discussed challenges in optimization processes, such as identifying the best solution, which requires understanding of optimization goals and criteria. He added that even if the criteria are known, there is still the possibility of uncertainty in the solutions, and finally, the solutions have to be accepted by multiple human stakeholders. This is especially challenging with machine learning methods and data science approaches, as they are not always comprehensible. To overcome these challenges, methods are developed in iterations with decision makers and subject matter experts.

While the views of the panelists and audience on performance were divers – performance as efficiency of a technical system, as (perceived) quality and subjective utility of a product, or as self-expression of individuals – it became clear that researching the different levels of and perspectives on performance from a transdisciplinary perspective opens new horizons, for example, on definitions of performance in different research contexts. In some contexts, the understanding of performance depends on goals, which implies some kind of control ('sensing'). These goals can change over time, as can the understanding of performance.

Moreover, in other contexts performance means to act and decide in the most sufficient ('satisfiers') or in the best way possible ('maximizers'). Additionally, performance is also analyzed as an experience, a practice that unfolds its own character during ongoing, situated actions. To conclude, performance is dynamic over time and relative per context and individual.

In sum, this first panel showed the power and challenges of a transdisciplinary approach to the design of technology. Of course, technology in itself has to 'perform' to be used – it promises optimization, gains in efficiency and much more. But the very same technology is embedded into a constant stream of highly situated human 'performances' – social practices, activities. To build a bridge between both realms seems key.

In the future panels, we aim to follow-up by addressing further questions, such as:

- What are long-term effects of human-technology collaboration: erosion of team performance?
- Are there changes in human-technology relationships through sensor technologies? New practices and performances?
- What are the unintended consequences of 'too much' or 'relatively much' sensor technology in an organizational context (are they still 'performative')?
- How does technology development affect performance understanding (paradigm shift)?
- How did different social and cultural groups act and react to technological transformation processes in their habitual body practices and performances?