

DGTF Annual Conference 2021 | Material Trajectories. Designing with Care  
Berlin, 6<sup>th</sup> to 8<sup>th</sup> of May 2021

---

The 17<sup>th</sup> Annual Conference 2021 of the DGTF (German Society for Design Theory and Research) takes place from 6<sup>th</sup> to 8<sup>th</sup> of May 2021 in cooperation with the Cluster of Excellence »Matters of Activity. Image Space Material« at the Humboldt-Universität zu Berlin and the Kunsthochschule Weißensee. Due to the Covid-19 situation, the conference will most likely be held in virtual form. Further information will follow.

DGTF conference committee: Prof. Matthias Held (Schwäbisch-Gmünd), Prof. Kora Kimpel (Berlin), Prof. Dr. Claudia Mareis (Basel/Berlin), Prof. Christiane Sauer (Berlin).

Support organisation and concept: Léa Perraudin, Clemens Winkler

---

### Conference theme and strands

#### **Material Trajectories. Designing with Care**

Design is deeply engaged with materials. Yet the attempt to make sense of the properties, composition and behaviour of matter, artefacts and built infrastructures is accompanied by a pressing question: “who is in fact designing?” As highly elaborated and engineered materials in fields like medicine, biotechnology or aerospace develop further, the possibilities as well as challenges in designing (with) materials and their activity become apparent. Simultaneously, matters of existential urgency such as anthropogenic climate change, extractive capitalism, environmental injustice and the quest for resilience call for a response (Tsing/Bubandt 2017): They demand a grounding in the material itself as a practice of care in order to identify means, develop modes and foster motives for a sustainable future. In recent years, discourse in the humanities, natural sciences, the arts and design alike has witnessed a renewed devotion to matter and material cultures as well as an engagement with the legacy of old and new materialisms and their respective ontologies (e.g. Barad 2007; Bennett 2010; Fratzi et al. 2021; Grote 2019, Deacon 2011; Stakemeyer/Witzgall 2014).

Design as a practice and knowledge culture seems to be at the hinge of this highly entangled dynamic as it not only addresses and analyzes these questions but contextualizes and synthesizes them through the open-ended processes of making. The fundamental role of materials in design, whether fabricated or organic, from nanoscale to the planetary signals towards the significance and scope of design research in the Anthropocene. By shedding light on the modes of production in their scientific and cultural evolution, the various practices of speculating, informing, dismantling and reassembling also allow for a critical portfolio of contemporary environment-human-relationships. Cycles and sites of extraction, production, consumption, obsolescence, disposal and/or recycling have to be conceived as the scaffolding of mass material culture and therefore are crucial for every design process.

In the face of system failures and states of emergency on a global level it seems worthwhile to ask once again if the designated task of design is just problem solving, innovating, or optimizing. Yet if we take alternative modes of engagement and co-creation into account, in particular the operations of complicating, scrutinizing and queering materials, they urge us to “stay with the trouble” (Haraway 2016) of the planetary condition. Consequently, ideas of constructability and the “how-to” logic of design remain in an ongoing process of negotiation and interpretation towards matters of care. Caring as a material engagement and non-normative form of ethical obligation (Puig de la Bellacasa 2017) can be understood as a situated practice of interweaving in a complex life-sustaining web (Tronto 1993). It entails acknowledging our complicity in the status quo but also the possibility to embrace unruliness, vulnerabilities and impurities as forms of aspirational solidarity in a more-than-human world (Shotwell 2016). Thus, designing with care requires a critical self-examination and an ongoing attempt at problematizing the predominant systems of reference, styles, working methods, forms of knowledge and object cultures in their circulation. Nurturing these commitments is of particular importance for design research and the differentiation of design as a scientific discipline.

The Annual Conference 2021 of the DGTF intends to make these questions graspable and to discuss the contribution of design through four interlaced strands: **Sympoiesis of Making, Performative Surfaces, Living Matter, Designing Resilience.**

### **Sympoiesis of Making**

If the activity of matter is taken seriously, design itself has to be conceived as a highly entangled process of co-creation. This collaborative endeavour is not only negotiated between human agents but also a vast variety of more-than-human agencies and their respective relations. The notion of sympoiesis (Haraway 2016) provides a novel understanding of design processes through emphasizing the ways agencies and environments emerge and affect each other: Every task and every event in the workshop, in the lab, at the desk, the computer screen, the outdoors etc. presents itself as a becoming-with of highly heterogeneous agents. Questions of representation, responsibility (Haraway 2008; Barad 2014), translation, visibility and scale are at the heart of performing and understanding these processes of co-creation and require refined modes to account for our work as designers.

### **Performative Surfaces**

Following recent advancements in functionalized surfaces for interaction design, product design and architecture performative surfaces and smart materials have become the focus of attention. The properties of these materials can be programmed by designing and engineering their structure through a direct inscription of information and transformation into the materials themselves. This enables processing and reaction in real time as the material operates simultaneously as sensor and actuator (self-sensing). Shape changing surfaces react to the environmental context by transforming in relation to use, thus allowing

for direct interaction with the surrounding world. The material becomes a medium of information and can be applied as a transformative device for harvesting energy or monitoring environmental influences. These capacities make performative materials and surfaces crucial agents of sustainable design and urge us to ask what can be achieved and communicated through and with the material.

**Living Matter**

The application of living biological organisms is central to contemporary food production, biotechnology and the design of nano- and microstructures among various other fields. Organs and implants are cultivated in vitro, skin cells are applied to lesions using 3D printers, clean meat is generated from cell cultures of living animals, microalgae become light sources using bioluminescence, and bioarchitecture allows entire buildings to be created through plant growth. Are these practices merely new forms of exploitation of the ecosphere or do they open up, as researcher Neri Oxman, suggests, a new way of life and a paradigm shift in the way we deal with nature – “from *consuming* nature as a geological resource to *editing* it as a biological one”?

**Designing Resilience**

The narrative of sustainable development is based on the normative idea of shaping a civilization in political, social, ecological and economical equilibrium without limiting the opportunities for future generations. Intrinsically linked to this is the belief that growth and economy can be reconciled with the potentially conflicting demands of ecology (Boehnert 2018). Accompanied through the diagnostics of the Anthropocene, the term resilience has gained popularity to describe adaptive capacities and survival strategies (in materials, organisms and societies) in order to endure crises (Grove 2017). While resilience is referred to as the attempt to partially replace an optimistic notion of progress, it seems to embody an opportunistic stance towards the manageability of crises (Halpern 2017). Are sustainability and resilience opposites, subsets or complementary? With regard to materials, artifacts, and entire socio-economic systems, design is challenged to take this into account (Lee 2016; Cowley et al. 2018).

.....

**Bibliography**

Barad, K. (2007). Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning. Durham: Duke Univ. Press.

Barad, K. (2014). “Diffracting Diffraction: Cutting Together-Apart”. In: Parallax, vol. 20, no. 3, pp. 168–187, DOI:10.1080/13534645.2014.927623.

Bennett, J. (2010). Vibrant Matter. A Political Ecology of Things. Durham: Duke Univ. Press

Boehnert, J. (2018). Design, Ecology, Politics: Towards the Ecocene. London: Bloomsbury.

Cowley, R. et al. (2018). Forum: resilience & design, Resilience, 6:1, 1-34.

- Deacon, T. (2011). *Incomplete Nature: How Mind Emerged from Matter*. New York: W.W. Norton & Company.
- Fratzl, P., Friedman, M., Krauthausen, K., & Schöffner, W. (Eds.). (2021). *Active Materials*. Berlin, Boston: De Gruyter.
- Grote, M. (2019). *Membranes to Molecular Machines: Active Matter and the Remaking of Life*. Chicago: University of Chicago Press.
- Grove, K. (2018). *Resilience*. London: Routledge.
- Haraway, D. J. (2008). *When Species Meet*. Minneapolis: Univ. of Minnesota Press.
- Haraway, D. J. (2016). *Staying with the trouble. Making Kin in the Chthulucene*. Durham/London: Duke Univ. Press.
- Halpern, O. (2017). *Hopeful Resilience*. [Hopeful Resilience - Architecture - e-flux](#)
- Lee, A. J. (2016). *Resilience by Design*. Cham, Switzerland: Springer International Publishing.
- Puig de la Bellacasa, M. (2017). *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis: University of Minnesota Press.
- Shotwell, Alexis (2016). *Against Purity: Living Ethically in Compromised Times*. Minneapolis: Univ. of Minnesota Press.
- Stakemeier, K./Witzgall, S. (Eds.). (2014). *Power of Material/Politics of Materiality*. Zürich: Diaphanes.
- Tronto, J. (1993). *Moral Boundaries: A Political Argument for an Ethic of Care*. London: Routledge.
- Tsing, A./Bubandt, N. (Eds.). (2017). *Arts of Living on a Damaged Planet. Ghosts and Monsters of the Anthropocene*. Minneapolis/London: Univ. of Minnesota Press.