

# Plenary Speech—Thomas Fischer (Germany)



## A Theory of Enquiry and its Application in Design PhD

### Supervision

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#### ABSTRACT

Design and cybernetics share several characteristics by which they deviate from the conventional paradigm of scientific research. These include the recognition of the subjective observer, of circular causality, of non-determinability, of self-organisation, and of ethics grounded in the individual. Due to these similarities (amongst other factors), cybernetics enjoys an increasing appreciation in the context of design research. This presentation introduces an emerging cybernetic theory for guiding PhD-level design research. The theory conceptualises design as human enquiry at a general level, and scientific research as a constrained subset of design. It integrates and further develops some previous cybernetic theories and models, including Robert Rosen's Modeling Relation and the Epistemological Triangle (attributed to Gottlob Frege and others). The theory offers guidance in supervision, based on a choice of one of three essential evaluation criteria chosen by students based on the objects and priorities of their research enquiries: Usefulness, meaningfulness, or form (i.e. robust prediction). Furthermore, the theory offers four alternative models for integrating work to satisfy both designerly and scientific modes of working into defensible design research outcomes and theses. These are based on the drawing of systemic boundaries in design research enquiries, and the related distinction (developed in several steps by Frayling, Jonas, Fischer) between research about design, research for design, research through design, and research as design.

#### ABOUT THE SPEAKER

Thomas Fischer is a Design Researcher, Educator and Cybernetician based at Xi'an Jiaotong-Liverpool University in Suzhou, China, where he works as an Associate Professor, teaching Architecture as well as Industrial Design. Thomas is a Fellow of the Design Research Society since 2008 and received the American Society for Cybernetics' Warren McCulloch Award in 2011. Thomas holds a PhD in Education from the University of Kassel in Germany and a PhD in Architecture and Design from RMIT University in Australia. Thomas was an Assistant Professor and the Discipline Leader of Product and Industrial Design at the School of Design at The Hong Kong Polytechnic University, and he was a Visiting Associate Professor at the College of Planning and Design at National Cheng Kung University in Taiwan. Thomas' research is focused on computer-aided architectural design, on design cybernetics, and on digital media.