Call for Papers
Special track at 20th conference of the Society for Philosophy and Technology
June 14-17, 2017 – Darmstadt, Germany

Artefacts, Design Practices, and Engineering Knowledge

Track Chairs: Sabine Ammon (TU Berlin), Rafaela Hillerbrand (KIT - Karlsruher Institut für Technologie), Sjoerd Zwart (Delft, University of Technology)

This track explores the nature of the many aspects of engineering knowledge, and the dynamics of its development and application in practice. Special emphasis will be placed on the interplay between artefacts, scientific laws and design heuristics. We aim to bring together perspectives from engineering sciences and the humanities (e.g. philosophy, history, and sociology of technology), preferably, but not necessarily, in interdisciplinary presentations. Case studies about knowledge practices are highly appreciated.

The multifaceted character of engineering knowledge has been the topic of only a limited number of scholarly studies (Houkes 2009) and deserves much more attention than it has been receiving thus far. Engineering covers many issues that became subject of study after the practical turn in the science studies (Soler et al. 2014). It covers at least the development of theoretical or descriptive knowledge, a gamut of modelling practices, design knowledge, application of mathematics, computational knowledge, heuristics, practical knowledge, experimentation, functional knowledge, planning, normativity, know-how, tacit knowledge, and so forth (Vincenti, 1990, Faulkner, 1994, Zwart, de Vries 2016). One engineering project may combine almost any of these ingredients, often on a smaller scale than in science.

One way to systematize the many cognitive facets of engineering is to apply the classical divide between theoretical, descriptive, or law-like knowledge, on the one hand, and practical, means-end or heuristic knowledge on the other. Other, more fine-grained typologies, follow bottom-up routes, and discern for instance ‘criteria and specification’, ‘practical considerations’ and ‘design instrumentalities’ (Vincenti 1991; Faulkner 1994), or pursue top-down methods identifying for instance ‘physical’, ‘functional’ and ‘process knowledge’ (Ropohl 1997, De Vries 2003). Still other divides are between explicit and tacit knowledge, and between external (Gaycken 2010; Kornwachs, Spur, Hubig 2010), and internal technological knowledge (Meijers & de Vries 2009; Houkes 2009; Kornwachs 2012). None of these taxonomies however are generally accepted. Yet, all of them identify important facets of engineering knowledge relevant for formulating, designing and implementing well-formed artefacts, and by doing so, substantially contribute to the grammar of artificial things.

In this track we want to dig into the actual processes and practices of any facet of engineering knowledge development, the products of these developments and the relation between these processes and products. Consequently, relevant questions relate but are not restricted to the following issues.

- How, if so, does engineering knowledge differ from more descriptive knowledge by means of its normativity, functionality, means-end character, intentionality, form, confirmation, generalizability, visualization (Ferguson 1992), and so forth, and what is relation between these aspects?
- What is the role of design artefacts (e. g. sketches, plans, models, prototypes, simulation tools) in the dynamics of engineering knowledge acquisition, transformation and transfer in practice? What is their normative impact?
- What is the grammar of heuristics, design methods, and use plans? How do they structure the process of product development as well our actions and behavior when using these products?

Any empirical case or practice study illustrating these or similar questions is warmly welcomed, just as more theoretical contributions are.

Abstracts of maximal 350 words for individual papers should be submitted by December 5th at https://easychair.org/conferences/?conf=spt2017. Please make sure to submit to the special track "Artefacts, Design Practices, and Engineering Knowledge". For further information about the SPT conference, see also: www.philosophie.tu-darmstadt.de/spt2017.

Timeline

- December 5th 2016: Deadline for the submission of abstracts
- March 1st, 2017: Expected notification of acceptance
- June 14th-17th, 2017: Conference dates

For more information about the content and focus of the track, please contact Sabine Ammon (ammon@tu-berlin.de), Rafaela Hillerbrand (rafaela.hillerbrand@kit.edu) or Sjoerd Zwart (S.D.Zwart@tudelft.nl).

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