

**Dissertation Release****25.10.2022**

# What is the meaning of being empathic in human-centred product design?

<b>Title of the dissertation</b>	Incomplete and inconstant empathy in human-centered product design and development
<b>Contents of the dissertation</b>	<p>Understanding users is a core component in human-centered product design and development. It helps designers define design questions, understand in-time design challenges, and improve user experience. Empathic design methods are developed on this basis. It aims to help designers step into users' shoes and understand users more precisely. However, empathizing with users is not always successful. Many reasons lead to an unsuccessful empathic understanding. This study investigates how interpersonal factors and types of users' mental content led to an incomplete empathic understanding. Specifically, it adopts a behavioral measure to quantify designers' empathic accuracy in understanding users' mental contents and emotional tone; shortens the measure and applies it in design research; implements the short measure in understanding user designer facial synchrony; and tests designers' empathic understanding under the influence of various factors.</p> <p>Moreover, since accurately identifying needs is a promising result of empathizing with users, this study also explores the relationship between designers' empathic understanding and their performance in needfinding. This study suggests a novel way to define latent needs to achieve this goal. It evaluates designers' performance from the quantity of latent needs and quality of needs. The results highlight the importance of accepting the incomplete and inconstant empathic understanding and statistically show how various interpersonal factors influence empathic understanding. Moreover, this study finds correlations between emotional tone accuracy and designers' performance in identifying important needs and the needs that users feel most satisfied. It is among the first to explain designers' incomplete and inconstant empathy from the aspect of interpersonal differences and explore the link between empathy and the designers' performance in needfinding.</p> <p>Overall, this thesis comprises six papers, including three journal papers and three conference papers. It explores the incompleteness of empathy, the inconstancy of empathy and the relationship between empathy and needfinding. It expands the existing knowledge of empathy in human-centered product design and development and provides a novel direction to understand how empathy contributes to user understanding and needfinding.</p>
<b>Field of the dissertation</b>	Mechanical Engineering
<b>Doctoral candidate</b>	Jie Li, M.Sc. (Tech.), born in 1990 in Wuhu, China
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<b>Electronic dissertation</b>	<a href="https://aaltodoc.aalto.fi/handle/123456789/117065">https://aaltodoc.aalto.fi/handle/123456789/117065</a>
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