Integrating Design Thinking with Value Sensitive Design through a Systems Thinking approach

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Abstract
This research work proposes a hybrid conceptual model called the Value-Sensitive Design Thinking model (VSDT), which integrates the Design Thinking and Value-Sensitive Design approaches by adopting a Systems Thinking perspective. Design Thinking (DT) is a human-centered design approach that emphasizes users' needs through empathy, redefinition of problems, ideation, prototyping and testing (Cross, 2011). On the other hand, through its tripartite methodology and design methods, Value Sensitive Design (VSD) aims at discovering and addressing value tensions that arise in complex design scenarios (Friedman et al., 2021). However, both VSD and DT have faced criticisms which we enumerate in this paper, pointing out the major theoretical issues and shortcomings of each framework. We recognize that, albeit both being design frameworks, DT and VSD come from different philosophical standpoints of dealing with design. By taking this proposed combinatorial approach, we view their differences as an opportunity for VSDT, and we attempt to address their criticisms by utilizing ideas, tools, and methods from both frameworks that can be used to inform and complement each other.

It has been argued that design problems are often wicked problems (Sweeting, 2018), which are complex in nature. As such, we present the idea of utilizing systems thinking and a general systemic perspective to design as a means of understanding, mapping and designing for complex sociotechnical systems. In this complex environment of wicked problems, where there are no true or false solutions (Rittel & Webber, 1973) and value tensions arise between the different stakeholders, design cannot be practised merely with simple analytical methods. DT's and VSD's role in dealing with such problems is presented, each with their own advantages and disadvantages.

The proposed VSDT framework relies on this systemic perspective for uncovering relationships, feedback loops and emergent properties of systems which, for which and within which we design. We posit that both DT and VSD are systemic in nature, albeit implicitly. By being more explicit about the importance of systems thinking, DT and VSD can be combined and intertwined despite their differences. Based on the fundamentals of systems theory, our suggested model expands upon the current knowledge and toolkits of these two frameworks. To provide a comparative analysis on the application of the VSDT model in design practice vis-à-vis more established VSD and DT approaches, we employ a systematic evaluation approach. This method entails scrutinizing key aspects like identifying and resolving value tensions, flexibility across diverse design contexts, along with effectiveness in managing multifaceted sociotechnical issues. Through this comparison, we indicate that VSDT is a promising new direction for design that can tackle complex issues of the world, especially in respect to abstract concepts such as wellbeing, sustainability, and ethics. Finally, we explore the applicability of VSDT and offer guidance for researchers and design practitioners who wish to incorporate our model into their practices.

KEYWORDS (3-5): Design Thinking, Value Sensitive design, Systems Thinking

References
Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg.
Friedman, B., Harbers, M., Hendry, D. G., van den Hoven, J., Jonker, C., & Logler, N. (2021).

Eight grand challenges for value sensitive design from the 2016 Lorentz workshop. Ethics and Information Technology. https://doi.org/10.1007/s10676-021-09586-y
Rittel, H. W., & Webber, M. M. (1973). Planning Problems are Wicked Problems. Policy Sciences, 4(155).
Sweeting, B. (2018). Wicked Problems in Design and Ethics. In P. Jones & K. Kijima (Eds.), Systemic Design: Theory, Methods, and Practice (pp. 119–143). Springer Japan. https://doi.org/10.1007/978-4-431-55639-8_5