



Faculty of Design

2020

## Mapping Wicked Problems: A theoretical framework for socially constructed knowledge systems

Verma, Neeta

---

### Suggested citation:

Verma, Neeta (2020) Mapping Wicked Problems: A theoretical framework for socially constructed knowledge systems. In: Proceedings of Relating Systems Thinking and Design (RSD9) 2020 Symposium., 9-17 Oct 2020, Ahmedabad, India. Available at <http://openresearch.ocadu.ca/id/eprint/3671/>

*Open Research is a publicly accessible, curated repository for the preservation and dissemination of scholarly and creative output of the OCAD University community. Material in Open Research is open access and made available via the consent of the author and/or rights holder on a non-exclusive basis.*

*The OCAD University Library is committed to accessibility as outlined in the [Ontario Human Rights Code](#) and the [Accessibility for Ontarians with Disabilities Act \(AODA\)](#) and is working to improve accessibility of the Open Research Repository collection. If you require an accessible version of a repository item contact us at [repository@ocadu.ca](mailto:repository@ocadu.ca).*

## **Mapping Wicked Problems: A Theoretical Framework for Problem Framing in Design**

by Neeta Verma

Associate Professor, Visual Communication Design

University of Notre Dame

RSD9 Themes and Challenge Areas: Socially constructed scientific knowledge systems

### **Abstract**

Social Design is an emerging area where design is used to address societal imbalances and inequities. Designers are increasingly transitioning from their traditional roles and expanding their footprint by addressing 'wicked problems' like poverty, urban renewal, digital divide, youth violence, and education through collaboration and participatory practices that instrument and render social innovation. This paper presents a theoretical framework through which designers develop an understanding of social ecologies that helps the design processes drive social innovation and systemic change, specifically in the area of social design.

In a world that is becoming more global, economies are traversing many boundaries, distances are shrinking, cultures are converging and as a result, many socio-economic challenges are becoming a shared predicament that we as humans face today in a ceaseless effort to sustain a humanized environment. How then does the designer get impacted by these paradigmatic shifts and the changes in social ecology within which designers define their realm of influence and frame their problems?

If design and designers are to move away from their traditional roles and expand their footprint in addressing larger issues [wicked problems] like poverty, urban renewal, school curriculum design, or education, they will need to acknowledge that their role is only a part of a shared responsibility between stakeholders and experts from other disciplines. Additionally, in examining these societal issues the considerations also need to include the scale at which these problems exist; locally, regionally, and globally. The paper examines the context within which the role of design/designers continues to evolve. With the emergence of new areas of influence [complex systems, or environments for living, working, playing, and learning\*] the role of the designer has expanded and evolved to embrace these broader expectations. The emergence of virtual spaces created a major shift in the 1990s. It redefined the crucial role that users came to play in the outcome of design. However, it is the idea of "wicked problems" that contributed heavily to this seismic deflection. The rapid change of scale at which problems came to be defined, especially within societal contexts, made it imperative for designers to extend and broaden their approach in gaining a deeper understanding of the context within which they operate in an effort to create sustainable impact through design innovation. In this new ecology, in addition to serving as innovators, the role of designer transformed to incorporate additional roles, to that of being collaborators, facilitators, catalysts, and co-creators.

The paper is divided into three sections:

1. Definition of the term social ecology as it relates to the design process and how its understanding impacts problem framing. It is important to understand the import of this concept within design. As with all systems (ecological, societal, or political) what surfaces to the top is not the problem but only an indication of the problem. Beneath this surface, there are several contributing factors that are referred to as "social ecology." For the designer, therefore, to be able to arrive at a solution that is sustainable, there needs to be the ability to recognize the factors that create the core socio-ecological environment

2. The second section examines the role of the designer as a part of a larger group and elaborates the design process of participation in the new social ecology where increasingly the designer is expected to make an impact not just singularly but through participation and collaboration. The making (while it remains integral to the process) is being driven by thinking (research, testing, and validation) but most of all through collaboration. The critical component of the context within which designers function today is led by a framework where designers design with not design for; the design process is driven by collaboration not prescription and above all change is driven by inclusion, not exclusion. The section also explores and demonstrates how problem framing, in turn, affects the design process used to surmount challenges (elements that resist change) in creating sustainable solutions.

3. The third and final section showcases a project titled Mitigating Youth Violence. The project is an undertaking of the Social Design class at the University of Notre Dame that examines the problems of youth violence in a collapsed economy and a city ridden by deep socio-economic fissures. The project demonstrates how design is implemented within a micro-environment and design interventions are guided by collaboration and participation. The process of solution-finding begins when the designer is asked to stand outside of themselves to understand the larger social ecology within which they operate not as mere designers but as part of a group of stakeholders that are equally invested in the outcomes. It is a solution-finding process where the designer aims, not only to seek a resolution but also to understand in great depth the complex and intricate social context within which their answers seek congruity. It requires at once a breadth of understanding and depth of social competency (participation), of the frame of reference within which the solutions offered will finally function.

The societal contexts within which design is practiced have made it imperative for designers to broaden their approach in gaining a deeper understanding of the social ecologies within which they operate in an effort to create a sustainable impact. There exists a symbiotic convergence between the design process and social innovation, and it is within this the convergence that this paper positions the crucial role that the understanding of social ecologies plays — one that is not only essential but critical.

\*Richard Buchanan, 1992

Social design; problem framing; wicked problems; social ecologies; social innovation; design process