A Reflexive Compass for Navigating Complex Systems: Insights from engaging across diverse mountain communities

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How might a reflexive, mixed-method systemic design approach offer insights for understanding and engaging in emergent, place-specific sustainability transformations? Expanding beyond design methods and including more embodied as well as scientific methods can promote greater inclusivity and diversity in how sustainability challenges are addressed. While systemic design promotes plural methods and ways of knowing, more insight is needed in applying multi-modal approaches across complex, “real-world” applications. Furthermore, greater reflexivity on the implications of systemic design practices and methods is necessary to ensure more responsible scaling of initiatives across diverse cultures, places and contexts. In this presentation, we offer a practical example of how a systemic design process was used to inform a reflexive compass for engaging in rural communities with different stages of sustainability transitions. Based on a longitudinal, comparative research project, a portfolio of methods from systemic design, science, education, and embodied experiences was developed and prototyped across three mountain communities: Ostana, Italy; Hemsedal, Norway; and Mammoth Lakes, California. We used Olmos-Vega et al.’s reflexivity framework to analyse the different contextual, relational, and boundary-related factors that shaped how the methods were used during the emergent process of engaging across each of these communities. We discuss the key takeaways from this process, limitations, and other possible method combinations for future research avenues. From these insights, a series of guiding questions, or a reflexive compass, was developed for others to consider using when navigating complexity and uncertainty in their own research and praxis contexts.

KEYWORDS: transdisciplinary methods, scaling deep, regenerative design, plural sustainability pathways, real-world practice

RSD TOPIC(S): Methods & Methodology, Socioecological Design

Presentation Summary

Today's interconnected social and ecological crises are more entangled than ever, yet many research agendas continue to uphold practices that are misaligned with the emergent, complex, and unpredictable nature of these challenges. Sustainability scientists suggest one reason for this disconnect is the limited knowledge of how different methods and practices from diverse disciplines and cultures could work together to more effectively respond to complex challenges (Knickel et al., 2019; Schlüter et al., 2022). This extends to systemic design as well — while concepts like methodological plurality and adaptability are strongly supported in the field's underlying principles and frameworks, most of the established methods are still rooted in design. Expanding systemic methods to include different ways of knowing, from scientific knowledge to embodied knowledge, can help broaden our understanding of sustainability challenges through diverse perspectives (Luthe, Fitzpatrick et al., 2021). This raises questions about method choices and their applications across different contexts, cultures, and spatial-temporal scales (Barbero & Bicocca, 2018). What approaches can and should be scaled and amplified to other contexts without inadvertently reproducing systemic injustices? (Soriano et al., 2022; Vink & Koskela-Huotari, 2022) This is especially critical in complex place-based sustainability research, where researchers are increasingly finding themselves in shifting roles: what reflexive capacities are needed to responsibly engage with multiple types of actors, sectors, cultures and scales? (Schreuder & Horlings, 2022).

In an attempt to grapple with these critical questions, this presentation illustrates how a systemic design process was used to inform a reflexive compass for engaging in rural communities with different stages of sustainability transitions. We explored how established systemic design methods, such as gigamapping workshops (Sevaldson, 2015) and synthesis maps (Jones & Bowes, 2017), could be combined with embodied

experiences (Bentz et al., 2022; Luthe, Schütz et al., 2021) and scientific methods, such as social-network analysis and land use analysis to identify plural ways of understanding and engaging in complex systems. This portfolio of methods was prototyped concurrently across three international mountain communities: Ostana, Italy; Hemsedal, Norway; and Mammoth Lakes, California, over a two-year period. A systems-oriented design approach (SOD) was used to investigate how the emergent relationships between context, knowledge, stakeholder dynamics and researchers' roles influenced how and when each of the methods was used. To analyse the insights gained from this process, we used Olmos-Vega et al.'s framework for different reflexivity typologies - personal reflexivity, interpersonal reflexivity, methodological reflexivity and contextual reflexivity (2022; Walsh, 2003) with the addition of boundary and data reflexivity by the authors. The findings highlight key themes around continual boundary reframing, real-time adaptation of methods to contextual and relational changes, continuous analysis and synthesis of data during rather than after the collection process, and flexible worldviews that allow for cultural code-switching.

These themes are synthesised and illustrated through concrete examples, accompanied by visualisations that describe the emergent process of engaging across multiple communities at once. From this analysis, we developed a series of guiding questions, or a reflexive compass, to encourage others to build greater awareness of how they might navigate complexity and uncertainty in their own research and praxis. Susur and Karakaya (2021) highlight the challenges of replicating sustainability initiatives, as there is a tendency to produce case-based solutions rather than generalisable applications. By offering a question-based approach that can adapt to different users and contexts, our proposed compass aims to provide a reflexive, inclusive and responsible contribution towards scaling systemic design methods and processes.

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