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Scaling behaviour change for a 1.5 degree world: transformations and systems thinking

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Newell et al. (2021) provide an insightful interdisciplinary approach to address scaling from individual behaviour change to systems change. I highlight two contributions that are added by expanding this work to engage with the transformations and sustainability science communities: (1) perspectives on the dynamic relationship between individual change and systems change; and (2) the role of systems thinking for navigating complexity and critiquing systems framings.

Commentary

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Newell et al. (2021) offer an excellent contribution towards scaling behaviour change. Their contribution bridges understandings of individual behaviour change and the broader social and political structures that shape and explain individual behaviours. They engage with the disciplines of economics, psychology, sociology and political economy and frame an ecosystem of transformation. I propose here that there is more to be gained by also linking these understandings into research from the transformations community.[1]

Transformations research is directly concerned with understanding the structures, systems and enabling factors that shape transformation (Scoones et al., 2018). Transformations literature often refers to 'sustainability' as an over-arching, multi-problem challenge rather than focusing on a component therein (e.g. climate mitigation). Research tends to take a transdisciplinary approach to explore pluralities of worldviews and knowledges in place-based cases (Caniglia et al., 2021; Kates, 2011). In this instance, there are (at least) two ways in which transformations research could stretch and expand the understandings being developed by Newell et al.[2]

Firstly, transformations research offers nuanced understandings of the dynamic relationships between individual change and broader systems change. Researchers in sustainability science pay attention to the values and mindsets of individuals as routes towards triggering transformations (e.g. Horcea-Milcu et al., 2019; Woiwode et al., 2021). Such approaches study 'inner transformations' as changes to these values and mindsets. There is work that explores how inner transformations are triggered, and how they shape changes in individual, collective and policy-making behaviours (Tröger & Reese, 2021; Wamsler et al., 2021). Such work is nuanced in exploring the dynamics between 'inner' and individual-level change and broader political, social and economic changes (see Benessaiah & Eakin, 2021 for an excellent example of the role of crises). Such work goes a long way towards Newell et al.'s calls for a 'contextualized, transformative and dynamic view of scaling that synthesizes feedbacks between the individual and systems levels' (p.2).

In exploring these dynamics across scales, transformations research increasingly engages with a leverage points framework and systems thinking (Abson et al., 2017; Meadows, 1999). In parallel to Newell et al.'s framing of shallow and deep scaling, leverage points address shallow and deep interventions for systems transformation; the deepest leverage points are around questioning the system properties of paradigms and structures, and the shallowest are around properties of materials and processes. However, systems are complex, multi-scaled, sometimes place-based (e.g. social ecological system), sometimes tightly technically defined (e.g. 'the food system'), and sometimes less tangible (e.g. knowledge as a system). Systems thinking in sustainability science recognizes that multiple systems framings are nested and connected over multiple scales (e.g. Davelaar, 2021). It encourages us to consider which system is being intervened in, defined by whom, at what depth, towards what normative outcomes, and how impacts are shaped by other connected or nested systems (Leventon et al., 2021).

The second contribution of transformations research to this ecosystem of transformation lies in this systems thinking approach to navigate scales, disciplines and complexity. At its simplest, systems thinking helps provide an organizing framework to position different perspectives and disciplines relative to each other, considering how disciplinary agendas link and

[1]Here, the transformations community refers broadly to researchers who specifically label their research as being about fundamental societal transformation for sustainability; often it is transdisciplinary and co-produced, and in some cases, transformative.

[2]I would also encourage engagement with scaling concepts used in transformations research, particularly the distinctions of scaling up, scaling out and scaling deep by Moore et al. (2015).

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stretch each other. However, it also pushes us further towards critiquing how individuals are embedded in societies and broader political economies, that in turn are nested within, and connected to, other systems that create and reinforce them, while being reflexive of our positionality in defining and framing these systems. In doing so, we are pushed towards unpacking systems of democracy, knowledge and power to unravel how paradigms and structures therein shape opportunities for scaling behaviour change towards transformation.

In summary, I can see only benefits in exploring how sharing across these themes helps create solid, nuanced understandings of *ecosystems of transformation* towards achieving a 1.5-degree world.

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