



**Relating Systems Thinking and Design
2022 Symposium
University of Brighton, Brighton, UK,
October 13-16, 2022**

THE FROG THAT LEAPED

Helen Avery

Centre for Advanced Middle Eastern Studies / Centre for Environmental and Climate Science, Lund University, Sweden

ABSTRACT The family of methodologies and approaches used and developed by the systemic design community has several characteristics that could play a vital role in supporting collective visioning and concerted action for sustainability transitions. It offers heuristics for bridging scales and domains, and tools for constructing spaces of joint reflection, visioning and decision-making. These methodologies enable us to combine learning from speculation with the material process of trying out our ideas, as well as to draw on embodied experiences and emotions. Aesthetic traditions and craftsmanship transcend purely instrumentalist and functional objectives. Importantly also, the practice of iteratively applying reflexivity, design thinking and systemic approaches to our own practices of prototyping, mapping or visualisation offers potential to further develop relevant methodologies. As individuals, the capacity of systemic designers to decide in which directions to move forward is often limited by dependence on funding from industry and strong stakeholders. This tends to constrain design criteria, framing, agendas, timelines and participants in commissioned systemic design work, as well as shaping the orientation of design schools. However, as a community, we collectively have the expertise, resources and motivation to engage in concerted, informed and intentional action that is consistent with our ethics and value base. The presentation outlines some options and directions in methodological development that could support such work, as well as pointing to possible challenges and pitfalls at a time when our community is contemplating modes of growth, the formation of

new alliances, a widening of methodological repertoires, and a critical examination of our current toolkits. It is here suggested that one of the central questions we need to pose concerns a deeper reflection on what the objective of 'systemic change' actually entails.

KEYWORDS: systemic design, designing methodological development, future-oriented methodologies, knowledge systems, agenda-setting, ethical praxis, systemic change

RSD TOPIC(S): Methods & Methodology

Systemic design at the crossroads – options, constraints and design criteria for methodological development

Since its inception, the systemic design community has been engaged in a process of simultaneously inventing and reinventing itself, consolidating advances as well as pushing limits. As a contribution to these discussions, I will here use the metaphor of leaping frogs to point to some aspects I find particularly important to consider at the stage we find ourselves at today.

Pumpkin toadlets are a tiny species of frogs that have all it takes to jump and launch themselves into the air. However, their ears are so small that they are unable to orient themselves and adjust their movements in the air, so that - more often than not - they end up falling on their heads when they land (Essner et al., 2022, see also [These tiny frogs are really bad at landing jumps | Science News - YouTube](#)). Drawing on this metaphor, I therefore wish to argue that our first priority in extending the range of approaches to include in our joint reflection on methodologies should be directed towards fields that can help us to orient ourselves and adjust our direction while in mid-air, as well as to the crucial questions of where and how we wish to land.

We are living in a historical period where new research fields emerge at a pace that is sufficiently rapid compared to human lifespans, for the dynamics of emerging fields to have become in itself an object of research attention. Based on such research, we may expect that systemic design as a research field will be on a trajectory that is moving from a fluid, open, and explorative phase of development, towards a phase of increasing rigidity and institutionalisation. Initial phases of emerging fields tend to be driven by often fortuitous circumstances, needs, curiosities, insights or discoveries,

while subsequent phases become constrained by the need to delimit and defend a territory (Trowler, 2001).

A high level of fluidity, innovation and creativity is possible within small groups of collaborators with regular interaction and opportunities to think together. By contrast, to persist over time, the need for institutional support tends to drive formalised conceptualisation and communication, which allows a reach beyond small groups. By the same token, as well as producing empty signifiers (Wullweber, 2015), this also tends to generate standardised methodologies, rigid definitions and delimitations, to enable inter-comprehension across time and space (Avery, 2022). In small groups, the meaning of concepts and methodological approaches are heavily contextualised and informed by shared experiences, while those used in wider research communities tend to become decontextualised and abstract, and thereby also more distant from and insensitive to impacts on societies or the environment. In the longer term, as the circumstances which initially led to their emergence and allowed them to develop shift, most research fields and associated methodologies eventually decline, unless they are able to maintain sufficient openness, critical awareness and agility to reinvent themselves.

Such dynamics are of particular concern for the systemic design community, which is committed to pushing the forefront of research and practice in the field, as well as to purposefully exploring what may lie beyond. The community is currently in a critical phase of growth, seeking to connect with approaches and practitioners outside a relatively homogenous groups of professionals with a design background (Drew, Robinson & Winhall, 2020). In this, it is motivated by its inherent self-reflexivity to question its own premises, bias, and limitations - but it is also obliged to launch itself in this endeavour by the very nature of the societal and environmental challenges that it seeks to address.

How then can the systemic design community maintain the fluidity linked to small group dynamics, while at the same time reaching out into unfamiliar and or uncharted territories? Developing new expertise, alliances and methodologies takes time, but planetary urgencies are accelerating, so that the time needed to evolve organically is lacking. If we wish to remain relevant in research and practice, we are thus compelled to face the issue of our own collective development intentionally and reflectively.

Just as the tiny pumpkin toadlets, we have the strength to launch far ahead, beyond our familiar environment. But this entails developing, as a community, the capacity of our collective “inner ear”. Systemic design approaches already engage with futures, by elaborating scenarios, anticipating trends, and supporting systemic change. Defining desired futures is one of the seven steps of the Systemic design toolkit (Jones, 2021), while strategic foresight is embedded in synthesis mapping and Gigamapping (Sevaldson, 2013; Bowes & Jones, 2016), across different timeframes, through the exploitation of the timelines and envisioning methods. In our ambition to move forward, an essential element is thus pursuing and deepening the engagement with futures, forecasting and future-oriented methodologies (Avery, 2022). This can involve explicating “future” as a marginal context that requires reconciliation with methodology, while consciously applying these approaches to our own self-understanding and strategic decisions concerning our desired futures as a community.

The ambition to intentionally expand our methodological toolkits can additionally benefit from understanding gained in other fields on how methodologies function within systems of knowledge production - in particular cross-disciplinary challenge-driven fields that are oriented towards practical applications. Notably, a deeper reflection on work concerning interrelationships between technologies, infrastructure, knowledge production and social systems (see Edwards, 2003) is required; as well as a more critical and proactive stance towards mainstream theories of change, including work on sustainability transitions.

To better understand our own shifting position in a landscape that is rapidly shifting, we would have to draw more intentionally on the diversity of lived experiences, backgrounds and positions we already represent as a community, shift the centre of gravity away from concerns specific to the global North (San Martin, 2021), but also devote time to reconnecting with modes of knowing that are more embodied, relational and respectful of life and planet (Drew, Robinson & Winhall, 2020). If, as individuals, much of our practice is tied to agendas of commissioning industries or other powerful stakeholders, as a community we are nevertheless able to establish norms of ethical praxis, to contribute to pathways, visions and strategies for futures

consistent with our values. Indeed, such ambitions and methods that support them (cf. Lutterman & Campbell, 2019) are already practiced in numerous instances.

With respect to the leap of faith our community is contemplating, what we seem to be aiming for could loosely be expressed as ethically informed, effective and socially just systemic change to support sustainability transitions and flourishing societies.

However, just as we cannot uncritically assume that any form of science, innovation or creativity will necessarily ensure sustainable futures or increased benefits for humankind (Krippendorff, 2021), I would suggest that we also question to which extent, in which contexts and in which ways it is meaningful to support change and “disruptive” approaches rather than stability, continuity or resistance. All things equal, abrupt change will above all benefit those with the capital to deal with transition costs, those who have set the agendas, and those who control key technologies and resources for the futures they envision. Concern with values, ethics and justice are arguably fundamental core values that characterise and motivate our community. From this perspective, we may consider concentrating less on innovation, rapid forward lunges, and effectiveness in systemic design interventions, and rather cultivate patience and more careful listening so that we can nurture beauty with gentle hands.

References

Avery, H. (2022). Future-Oriented Methodologies for Sustainability. In W. Leal Filho, A.M. Azul, F. Doni & A.L. Salvia (Eds.), *Handbook of Sustainability Science in the Future*. Cham: Springer. https://doi.org/10.1007/978-3-030-68074-9_34-1

Bowes, J., & Jones, P. (2016). Synthesis maps: Systemic design pedagogy, narrative, and intervention. *Proceedings of the Relating Systems Thinking and Design (RSD5) 2016 Symposium*. <http://openresearch.ocadu.ca/id/eprint/1932/>

Drew, C., Robinson, C., Winhall, J. (2020). Not the venn: An emergent notion of systemic design which transcends the intersection of design x systems thinking. *Proceedings of the Relating Systems Thinking and Design (RSD9) 2020 Symposium*. <https://rdsymposium.org/not-the-venn-an-emergent-notion-of-systemic-design-which-transcends-the-intersection-of-design-x-systems-thinking>

- Edwards, P. N. (2003). Infrastructure and Modernity: Force, Time, and Social Organization in the History of Sociotechnical Systems. In T.J. Misa, P. Brey & A. Feenberg (Eds.), *Modernity and Technology* (pp. 185-226). Cambridge: MIT Press.
- Essner Jr, R. L., Pereira, R. E., Blackburn, D. C., Singh, A. L., Stanley, E. L., Moura, M. O., ... & Pie, M. R. (2022). Semicircular canal size constrains vestibular function in miniaturized frogs. *Science Advances*, 8(24), eabn1104
- Jones, P. (2021). Systemic Design: Design for Complex, Social, and Sociotechnical Systems. In G.S. Metcalf, K. Kijima & H. Deguchi (Eds.), *Handbook of Systems Sciences* (pp. 787-811). Singapore: Springer.
- Krippendorff, K. (2021). From uncritical design to critical examinations of its systemic consequences. *Proceedings of the Relating Systems Thinking and Design (RSD10) 2021 Symposium*. <https://rsdsymposium.org/professor-dr-klaus-krippendorff/>
- Lutterman, A. & Campbell, T. (2019). Designing Futures with Care: Finding Our Way to Different Worlds Together. Toronto: OCAD.
- San Martín, W. (2021). Unequal Knowledge: Justice, Colonialism, and Expertise in Global Environmental Research. *Global Environment*, 14(2), 423-430.
- Sevaldson, B. (2013). Systems Oriented Design: The emergence and development of a designerly approach to address complexity. In J.B. Reitan, P. Lloyd, E. Bohemia, L.M. Nielsen, I. Digranes & E. Lutnæs (Eds.), *DRS // Cumulus: Design Learning for Tomorrow*, 14-17 May, Oslo, Norway. <https://doi.org/10.21606/learnxdesign.2013.133>
- Trowler, P. R. (2001). *Academic Tribes and Territories*. McGraw-Hill Education (UK).
- Wullweber, J. (2015). Global politics and empty signifiers: the political construction of high technology. *Critical Policy Studies*, 9(1), 78-96.