

Are We Practicing What We Preach? Scaling Out Knowledge System Infrastructure for Sustainability Transformations. Place-Based Publications: A Provocation and Proposal.

By: Samuel Wearne¹

¹PhD Candidate, Institute for Sustainable Futures, University of Technology Sydney-Australia.

Corresponding author: Samuel Wearne, samuel.wearne@uts.edu.au

Keywords: Knowledge co-production, leverage points, sustainability transformations, place-based epistemology

Abstract

Six years ago in Scotland, the 2017 Transformations to Sustainability Conference drew forth a discussion about the need for transformative changes in knowledge systems in order to realize more normative and sustainable futures. Participants voiced a growing discontent about the way that knowledge systems influence sustainability practice by shaping which kinds of knowledge gain power, who are seen as the experts, and how change is pursued.

Since then, calls for sustainability research to approach knowledge in ways that are more plural, contextual, decolonial, and deliberately co-produced have grown and gained momentum. However, discussing how the knowledge systems within academia might need to shift in structural ways to enable those changes remains under-explored. For example, how do mainstream processes in academia, like publishing in international peer-reviewed journals, interact with the issues of power we critique and the ideals we are pursuing?

I've been thinking about these questions alongside my PhD into sustainability discourses and place-based approaches to transformation. In this short and speculative paper, I recap some common themes in the calls to action and explore where there might be opportunities for strategic intervention. The specific opportunity I focus on is how academic knowledge systems engage with contextual ('place-based') knowledge, and I raise the idea of explicitly regional transdisciplinary publications as a potential leverage point in knowledge systems and their influence on sustainability. I hope to promote reflexivity about the current system and discussion of this potential addition: what could it look like, what incentives could it support, how could it influence power, and what pathways might it unlock for sustainability practitioners, local communities, and the landscapes that we live in?

Introduction

There is increasing discontent with the ethics and outcomes of knowledge systems that dominate the transdisciplinary field of sustainability science. Six years ago, the Transformations Community outlined this, suggesting diverse, plural, and emergent forms of knowledge co-production are needed to realize just and pragmatic sustainability transitions and transformations that are contextually nuanced and ethically pursued (Fazey et al., 2020). Since then, narratives about these issues and diagnoses of potential ways forward have been continually gaining pace. Table 1 indicates a small sample of some of these critiques and

calls for action in relation to knowledge systems for sustainability as they've been framed in sustainability science.ⁱ

Table 1. Sample of critiques and calls for transformations in knowledge systems for sustainability transformation, many of which are overlapping. This summary is limited and subjectively biased to the kinds of knowledge that the author has been drawn to, in line with the epistemic assumptions of this paper.

| Simplified narrative about the issue | Some narratives and ideas that might address those issues | Exemplar references |
|--|---|---|
| Part of the challenge of sustainability is the power afforded to different kinds of knowledge; epistemic biases toward abstract, universal and reductionistic concepts elide the value of contextual knowledge, non-Western knowledge systems, and personal experience. This tends to favour a utilitarian approach to change, rather than a processual one. | Use locally specific knowledge co-production processes that improve participation and recalibrate which power structures influence decision-making and change. | Caniglia et al. (2021) Wyborn et al. (2020) Fazey et al. (2020) |
| | Strengthen knowledge networks between leaders/individuals, and/or networks of bioregional and place-based social-ecological research (PBSER). | Berkes & Folke (1998) Meadows (2001) Loorbach et al. (2020) Carpenter et al. (2012) Norström et al (2017, 2022) |
| Policy and governance need to shift from a pattern of localizing global agendas to a 'scaling out' of contextually nuanced and participatorily-determined approaches to change. | Adopt the axiology and process of an emancipatory and participatory 'pathways' approach to sustainability transitions and transformations. | Stirling (2015) Ely (2022) Scoones et al. (2020) Hanspach et al. (2020) Hakkarainen et al. (2022) |
| | Use knowledge frameworks and structures that inform policy from the bottom up. | Pereira et al. (2020, 2021) Bennett et al. (2021) |
| | Pursue two-way learning between cultures and organisations wherein the structure for engagement is set by First Nations organisations, not Western organisations. | Strang (2008) Marrika et al. (2009) |
| Sustainability researchers and practitioners need knowledge, skills, and reflexivity, not just an ability for rational | Acknowledge researchers are both subjects and the objects of change, with processual and epistemological implications that | Bradbury et al (2020) Wassenius et al. (2023) |

argumentation or reductionist logic.

necessitate new approaches to research.

Researcher competencies and virtues can be built via processes like learning journeys, transformative learning, and methodologies that promote reflexivity and relational approaches to research.

Wooltorton et al. (2020)
Bawaka Country et al. (2015)
Chan et al. (2018)
West et al. (2018)

Personal and socio-cultural norms and competencies can be developed to enhance decision-making within complexity.

Caniglia (2023)
Kagan (2018, 2019)

This paper will outline and elaborate on a potential intervention that I presented to the Transformations Conference in 2023. It builds upon the critiques and aspirations in Table 1 to suggest that researchers consider the merits of developing regionally scaled place-based publications as a deliberate and systemic intervention (akin to knowledge co-production infrastructure) that can support sustainability transitions and transformations that are locally nuanced and shaped through democratic and deliberative engagements.

At this point, the reader may be wondering, ‘Why those references, and why not others?’ The context is that I offer this paper as an ‘opinion,’ and I hope to be consistent in the epistemic norms it calls for and the epistemological basis that it uses to make its arguments.

As such, the references and arguments presented reflect my reading of the literature whilst also acknowledging that my personal experiences and practical knowledge shape and complement an engagement with concepts in academic discourse. A key admission here is that one reason I see academic publications as a potential leverage point in the system is not due to theory but because, as a practitioner who’s new to academia, I have found that weaving systemic change is more of an opportunistic dance than a formula. It has always served me well to pay attention to the incentives that drive individuals and organizations when seeking to navigate and introduce change.

A Provocation: contemporary publication practices as a systemic enabler of the knowledge systems we critique

Many of the thinkers and papers in Table 1 have voiced an awareness of the irony in making calls for contextual, decolonial, and practical knowledge via de-contextually peer-reviewed academic articles that are published in (academic) English and only accessible via paywalls. We are, obviously, creating an argument for transformations by using the very same tendencies and systems that we identify as requiring change.

In writing this paper, I embody these contradictions. But I do so knowingly, as I’d like to share food for thought with the broad readership of this journal given the ‘moment’ that the Transformations Community, and sustainability science more broadly, appears to be

navigating. With these caveats and considerations as a preface, I suggest three ways the publication process influences the modern academic experience and knowledge systems for sustainability. They reflect the biases above but also many of the underlying arguments of ideas referenced in Table 1. The aim of surfacing these features is to justify why I believe the publications that we use can be a leverage point for systemic change. The reader and reviewers can decide if they ring true:

1. Publishing is powerful. It feeds into individual and institutional incentives and helps identify ‘experts’ in society. Doing well through publication leads to greater influence on policy with practical consequences for people and places.

2. Publication systems are biased in the kinds of knowledge they empower. From the process of international academic peer review through to the categorization of knowledge into universal disciplines and concepts, current norms in publishing reflect and are deeply suited to the worldview and knowledge system that designed it. Namely, it is suited to knowledge that is developed via processes of abstraction, reductionism, and de-contextualisation toward translocatable and universal truths. This helps tip the scales to academics in the Global North, who are fluent in English, and the institutions there that hold disproportionate power about what gets researched, how, and for whose benefit, even when the focus is on challenges faced by communities and cultures in the Global South.ⁱⁱ

3. To create the knowledge systems we say are needed to enable sustainable futures, we need transformative innovations, not just efforts of reform. The act of academic publishing appears to be a key practice that upholds incumbent knowledge systems in sustainability science and perpetuates power dynamics between experts and decision-makers, with implications for places and communities. In the field of sustainability science, we find ourselves calling for transformational changes in these arrangements, asking for new voices and knowledge systems to influence decisions, but in the act of doing so, we often re-create and re-empower the systems and cultures we seek to change. This not only carries irony, but it also risks transformative aspirations being channeled into patterns of systemic reform rather than system transformation.ⁱⁱⁱ In my view, considering the formats, tools, and practices used in publication might uncover transformative innovations that can shift the way sustainability research interacts with society in deeper, more powerful ways.

In summary, from the incentive cycles they create for individuals and institutions to the rationales and viewpoints they tend to bias, academic publications in sustainability science continue to influence which ideas have power. Patterns in publishing attract funding and attention, creating consequences for the distribution of social, financial, and material capital. This has implications on what is done, by whom, and toward what ends. In my view, there is an obvious need to ask if and how current practices in academia might better enact and empower the changes in knowledge systems that they are calling for. Beyond utilitarian ideas of actually achieving the goals we aspire to, there are also questions of ethical authority and process that should draw our attention to these concerns. If we’re to embody the kind of virtues that we say can help societies navigate change, it seems like a fair expectation that we first focus on ourselves. Perhaps the systems that we should use for transformational ‘experiments’ are those that influence us most directly; transformations can be difficult, damaging, and destructive processes, not just a force for good.

Can place-based publications be a leverage point for change?

To envisage an intervention that uses the publication process to (re)create systems that empower the types of knowledge that we call for, I encourage the reader to think about the region they're in now – this could be defined by a range of larger-than-local concepts, like a greater city region, state or provincial boundaries, or a biophysical pattern in the landscape, like the concept of a bioregion (Berg & Dasmann, 1977; Wearne et al., 2023).



Figure 1. A journal supporting knowledge specific to your region.

Imagine a publication (Figure 1) that creates a vehicle to regularly disseminate, archive, cross-pollinate, and deepen research into that context. It might explicitly include research into practices and policies that can support sustainability transitions and transformations specific to that context, but it might also include broader information about the social-ecological history and contemporary dynamics of that locale as important considerations to inform a readership interested in discussions about its future.

To preface this contribution, some risks worth considering include:

- i. How do we avoid the intervention we design from becoming a tool for co-optation, inadvertently disempowering and dismantling the features that generate alternative knowledge systems, like local cultures and languages?
- ii. How do we avoid this being performatively compelling but not powerful in terms of the knowledge that is created and how it is used?
- iii. How do we make it consistent with the ideas that inspired it?

Figure 2 uses Gunderson & Holling's (2002) seminal idea of the Adaptive Cycle to understand how systems change via complex, adaptive, and nested relationships. It builds on Wassénus et al.'s (2023) recent use of this heuristic to describe sustainability science as

entering a ‘reorganization’ phase after a long process of exploitation, conservation, and release (Box 1). The figure expands on this premise to speculate how regional publications might help support transformative directions by (i) enabling and accelerating the creation of plural, regionalized knowledge co-production systems for sustainability (Pathway A, Box 2) and (ii) positively contributing to reform of the incumbent existing global system (Pathway B, Box 3). The suggestion is that by viewing publication as a leverage point, sustainability scientists might strengthen place-based knowledge co-production systems (and collectively, a network) that systemically (re)empowers the changes that we’re calling for.

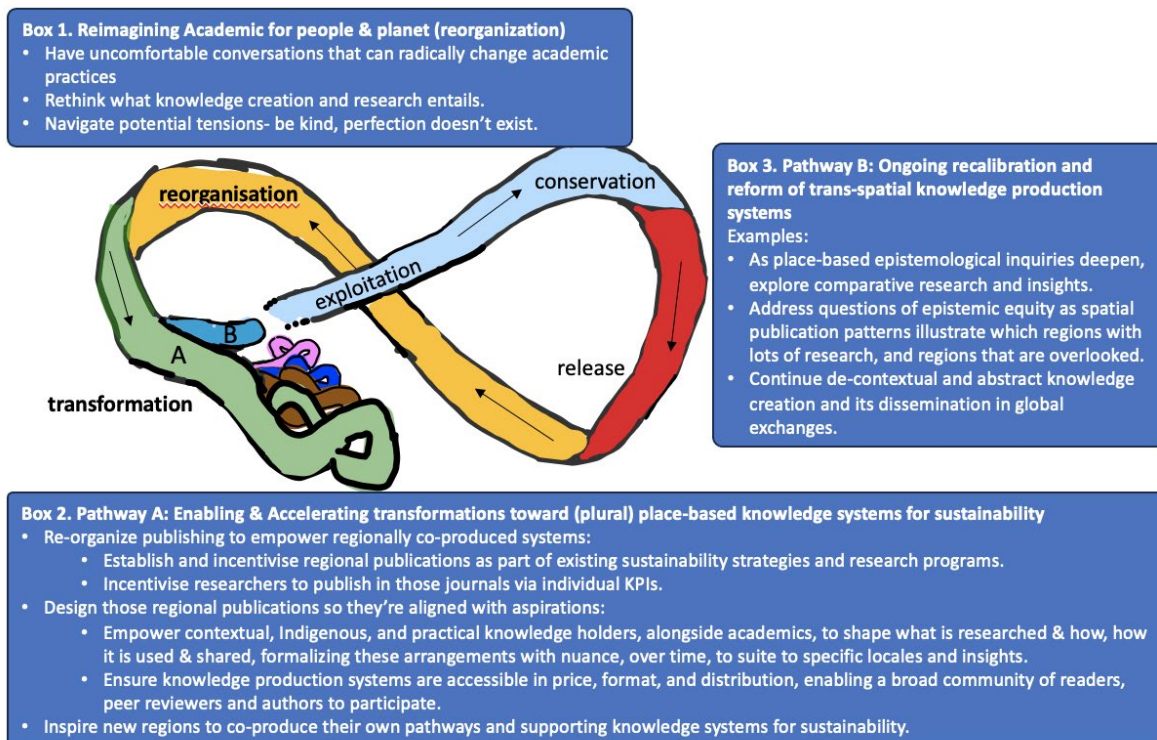


Figure 2. Speculative exploration of the reorganization and transformation phases of knowledge systems for sustainability using Gunderson & Holling’s (2002) Adaptive Cycle and extending work by Wassenius et al. (2023).

A brief discussion to complement Figure 2 is below.

How and why might regional publications start?

- By (co)sponsoring a journal, university(s) in the region might demonstrate their commitment to the sustainability transitions within their social and ecological communities. By linking publication within that journal to the KPIs of individuals in their institutions, they might align incentives for the journal’s success and for their employees’ careers, supporting impacts ‘on the ground’ within the researcher and developing new knowledge for society.

How might they be locally transformative?

- A regular transdisciplinary journal open to everyone with an interest in that region might be of use and interest to various stakeholders, influencing the type of

knowledge drawn upon to govern in that area. Funding agencies and policymakers might find nuanced and specific information useful when shaping their plans and programs. Local residents and communities might find the journal a meaningful resource to deepen their knowledge of that place, sharpening their collective competencies and contributions to local democratic processes. Researchers who live and work in the area might identify new opportunities to collaborate, developing a place-based epistemology. A context-specific format might see those with disciplinary expertise productively challenged by those with contextual, practical, and place-specific knowledge. Participation in the creation, selection, and discussion of the knowledge published in the journal might influence which/whose knowledge and voices gain authority and what happens there.

How it might become systemically transformative

- At a landscape level, a network of regional publications might help create the knowledge infrastructure to support visions of a ‘Patchwork Earth’ (Bennet et al., 2022), making the world and its epistemological systems richer and more diverse. There are systemic arguments for the resilience that such diversity can offer in a future rife with disruption and dilemmas (e.g., Berkes et al., 2002). Having this diversity creates a body of knowledge that trans-place and comparative research can draw from – in effect, building on the work, lessons, and ideas that have been raised by Balvanera et al. (2017) and Norström et al. (2022), for example, from existing global networks of PBSER.
- As a global collective that is concerned with topics of justice, seeing where regional journals do and don’t appear might provide some visibility into questions of ethics and attention: where is research concentrated, and where are the “research deserts” that might need more contributions in order to navigate their transition toward sustainable futures?
- As a community of individual researchers, the experience of doing work in a different system, and one which demands new competencies, may lead to new and valuable opportunities for transdisciplinary, trans-place exchange.

This idea, whilst outlined in a way both necessarily simplistic, speculative, and idealistic for a short article and a broad readership, is perhaps not that far from a variety of current practices – it just seeks to formalize the publication and dissemination of knowledge into a more deliberately considered knowledge (co-production) system. Within academia, research programs are routinely designed to consider impacts and outcomes in line with the host institution’s broader social and environmental goals outlined in purpose statements, sustainability plans, and public commitments. Projects, programs, and individual researchers often seek to create multi-stakeholder steering committees to help design and govern research, helping ensure an ethical and normative engagement between local stakeholders and the academic research process. The ‘outputs’ of a project and the knowledge it creates also often break past the act of academic publication, seeking ways for findings to be disseminated via more popularly read formats – like newspapers and social media. And there are, I’m sure, some journals out there that already have alignment in their design and function to the dynamics that I’ve suggested.^{iv}

Outside of academia, various precedents are also easy to find. Local and regional newspapers, despite often being in decline, routinely make locally specific research available to the local

public, considering various stakeholders and their knowledge systems in the process. Less obviously, in local governments across Australia, policymakers routinely create programs to build ecological and cultural literacy about a place on the one hand and rely on participatory and deliberative processes to engage in the planning process on the other. They also engage with academic research and experts as inputs into this process. Substantive local democracies are, at their best, perhaps expressions of knowledge co-production for sustainability transitions and transformations that draw in a broad variety of knowledge holders to inform actions and navigate dilemmas.

In this context, the work academics and academic institutions might do to develop and use place-based publications might be considered a relatively humble and perhaps an easy next step that complements these efforts. The potential value, I suggest, lies not in dramatically new ideas but in deliberately (re)deploying the act of publishing to create systemic interventions that (re)empower place-based knowledge co-production processes, establishing alternative and balancing influences against universalizing, de-contextualizing incumbents.

Conclusion

I've shared a relatively simple idea in the hope of furthering discussion on what ought to be done or experimented with, in a practical sense, to draw on ideas in transformations literature and enact the changes that we're calling for regarding knowledge systems for sustainability. It is a call to complement, not overhaul, current systems in academia, as I acknowledge the valuable role and contributions available from continuing processes of abstraction and trans-place dialogue. While not the only pathway available to spread and disseminate transformative engagements with knowledge,^v the focus of this paper is on academic publication practices in sustainability science, as this is a practice and a field that continues to play an important role in the politics and power dynamics that shape how we define and pursue sustainability in many parts of the world, and many sectors of society.

If we don't address the systemic issues that we've identified in the way we practice academia, the discussions we have as a Transformations Community seem to be at risk of becoming stuck in a state of contradiction, reinforcing the gravitational pull toward universal ideas and interventions. Members of the Transformations Community can help sustainability science by creating abstract theories and translocatable heuristics, but it should (also) be a community that fosters energy, resources, and tools that empower a lineage in sustainability that MacGillivray (2015) aptly identified as requiring a "relentless focus on context."

There is also a valid question about maintaining ethical authority and consistency between the changes that we call for and the changes we pursue and demonstrate. Demonstrating that we're willing and able to transform issues we see in an incumbent academic system that restricts pathways to sustainability despite potential influences on our personal lives and careers seems, to me, a very valid point of focus for a community that is often positioned and (self)identified as expert advisors on how other sectors, places, and lives ought to be transformed. I hope this paper sparks some reflexivity and attention to this issue.

In terms of the potential for regional publications as generalizable and translocatable interventions, there are necessary warnings and caveats to return to. This is not a call for a single type of change – each locale needs to decide when, if, and in what form regional publications might help – and then navigate the details, such as who to include, when, and

how. Formats, language, and processes need to be negotiated to work out how ‘deep’ a journal might go in its openness to different forms of knowledge. The pragmatic answer, I suggest, is not to avoid trying but to encourage ourselves as researchers to exercise our own agency within our institutions and to use the knowledge that we have about transformative theory and the places we reside in to try and weave systemic change.

Funding

This work was supported by a UTS Doctoral Scholarship.

References

- Balvanera, P., Daw, T. M., Gardner, T. A., Martín-López, B., Norström, A. V., Ifejika Speranza, C., . . . Perez-Verdin, G. (2017). Key features for more successful place-based sustainability research on social-ecological systems: a Programme on Ecosystem Change and Society (PECS) perspective. *Ecology and Society*, 22(1). doi:10.5751/ES-08826-220114
- Bawaka Country, Wright, S., Suchet-Pearson, S., Lloyd, K., Burarrwanga, L., Ganambarr, R., . . . Sweeney, J. (2015). Co-becoming Bawaka: Towards a relational understanding of place/space. *Progress in Human Geography*, 40(4), 455-475. doi:10.1177/0309132515589437
- Bennett, E. M., Biggs, R., Peterson, G. D., & Gordon, L. J. (2021). Patchwork Earth: navigating pathways to just, thriving, and sustainable futures. *One Earth*, 4(2), 172-176. doi: <https://doi.org/10.1016/j.oneear.2021.01.004>
- Berg, P., & Dasmann, R. (1977). Reinhabiting California. *The Ecologist*, 7(10), 399–401.
- Berkes, F., & Folke, C. (Eds.). (1998). *Linking sociological and ecological systems: management practices and social mechanisms for building resilience*. New York, New York, USA: Cambridge University Press.
- Berkes, F., Colding, J., & Folke, C. (2002). *Perspectives on resilience*. In C. Folke, F. Berkes, & J. Colding (Eds.), *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change* (pp. 31-32). Cambridge: Cambridge University Press.
- Birney, A., Cubista, J., Papi-Thornton, D., & Winn, L. (2018). Systems change education in an innovation context. New Haven: Forum for the Future/School of System Change/Systems-led Leadership/Evolutions Lab.
- Bradbury, H., Glenzer, K., Apgar, M., Embury, D. C., Friedman, V., Kjellström, S., . . . Devicha, S. (2020). Action Research Journal's seven quality choicepoints for action oriented research for transformations. *Action Research*, 18(1), 3-6. doi:10.1177/1476750320904562
- Caniglia, G., Luederitz, C., von Wirth, T., Fazey, I., Martín-López, B., Hondrila, K., . . . Lang, D. J. (2021). A pluralistic and integrated approach to action-oriented knowledge for sustainability. *Nature Sustainability*, 4(2), 93-100. doi:10.1038/s41893-020-00616-z
- Caniglia, G., Freeth, R., Luederitz, C., Leventon, J., West, S. P., John, B., . . . Vogel, C. (2023). Practical wisdom and virtue ethics for knowledge co-production in sustainability science. *Nature Sustainability*. doi:10.1038/s41893-022-01040-1
- Carpenter, S. R., Folke, C., Norström, A., Olsson, O., Schultz, L., Agarwal, B., . . . Spierenburg, M. (2012). Program on ecosystem change and society: an international research strategy for integrated social–ecological systems. *Current Opinion in Environmental Sustainability*, 4(1), 134-138. doi: <https://doi.org/10.1016/j.cosust.2012.01.001>
- Chan, K. M. A., Gould, R. K., & Pascual, U. (2018). Editorial overview: Relational values: what are they, and what's the fuss about? *Current Opinion in Environmental Sustainability*,

35, A1-A7. doi: <https://doi.org/10.1016/j.cosust.2018.11.003>

Ely, A. (Ed.) (2022). *Transformative pathways to sustainability: Learning across disciplines, cultures and contexts*: Pathways Network.

Fazey, I., Schöpke, N., Caniglia, G., Hodgson, A., Kendrick, I., Lyon, C., . . . Kliem, L. (2020). Transforming knowledge systems for life on Earth: Visions of future systems and how to get there. *Energy Research & Social Science*, 70. doi:10.1016/j.erss.2020.101724

Fischer, J., & Riechers, M. (2019). A leverage points perspective on sustainability. *People and Nature*, 1(1), 115-120. doi: <https://doi.org/10.1002/pan3.13>

Gunderson, L. H., & Holling, C. S. (2002). *Panarchy: Understanding transformations in the human and natural systems*. Washington, DC: Island Press.

Hakkarainen, V., Soini, K., Dessein, J., & Raymond, Christopher M. (2022). Place-embedded agency: Exploring knowledge–place connections for enabling plurality in governance of social–ecological systems. *People and Nature*, 4(5), 1141-1158.
doi: <https://doi.org/10.1002/pan3.10365>

Hanspach, J., Haider, J., Oteros-Rozas, E., Olafsson, A., Gulsrud, N., Raymond, M., . . . Plieninger, T. (2020). Biocultural approaches to sustainability: A systematic review of the scientific literature. *People and Nature*, 2, 1-17. doi:10.1002/pan3.10120

Kagan, S. (2012). *Toward Global (Environ)Mental Change: Transformative Art and Cultures of Sustainability* (Vol. 20). Berlin: Heinrich Böll Foundation

Kagan, S. (2019). Proving the world more imaginary?: Four approaches to imagining sustainability in sustainability research. *Osterreichische Zeitschrift für Soziologie*, 44, 157-178. doi:10.1007/s11614-019-00378-9

Loorbach, D., Wittmayer, J., Avelino, F., von Wirth, T., & Frantzeskaki, N. (2020). Transformative innovation and translocal diffusion. *Environmental Innovation and Societal Transitions*, 35, 251-260. doi: <https://doi.org/10.1016/j.eist.2020.01.009>

MacGillivray, B. H., & Franklin, A. (2015). Place as a boundary device for the sustainability sciences: Concepts of place, their value in characterising sustainability problems, and their role in fostering integrative research and action. *Environmental Science & Policy*, 53, 1-7.
doi: <https://doi.org/10.1016/j.envsci.2015.06.021>

Marika, R., Yunupingu, Y., Marika-Mununggiritj, R., & Muller, S. (2009). Leaching the poison – The importance of process and partnership in working with Yolngu. *Journal of Rural Studies*, 25(4), 404-413. doi:10.1016/j.jrurstud.2009.05.007

Meadows, D. (2001). Dancing with systems. Retrieved from
<https://donellameadows.org/archives/dancing-with-systems/>

Norström, A. V., Balvanera, P., Spierenburg, M., & Bouamrane, M. (2017). Programme on Ecosystem Change and Society: Knowledge for sustainable stewardship of social-ecological

systems. *Ecology and Society*, 22(1). doi:10.5751/ES-09010-220147

Norström, A. V., Agarwal, B., Balvanera, P., Baptiste, B., Bennett, E. M., Brondízio, E., . . . Spierenburg, M. (2022). The programme on ecosystem change and society (PECS) – a decade of deepening social-ecological research through a place-based focus. *Ecosystems and People*, 18(1), 598-608. doi:10.1080/26395916.2022.2133173

OECD (2017), *Systems Approaches to Public Sector Challenges: Working with Change*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264279865-en>.

Pereira, L. M., Davies, K. K., den Belder, E., Ferrier, S., Karlsson-Vinkhuyzen, S., Kim, H., . . . Lundquist, C. J. (2020). Developing multiscale and integrative nature–people scenarios using the Nature Futures Framework. *People and Nature*, 2(4), 1172-1195. doi: <https://doi.org/10.1002/pan3.10146>

Pereira, L., Asrar, G. R., Bhargava, R., Fisher, L. H., Hsu, A., Jabbour, J., . . . Weinfurter, A. (2021). Grounding global environmental assessments through bottom-up futures based on local practices and perspectives. *Sustainability Science*, 16(6), 1907-1922. doi:10.1007/s11625-021-01013-x

PHMC (2023). Philadelphia launches website to focus on regional social innovations and social entrepreneurs. PHMC website, Accessed online. 13-11-2023. <https://www.phmc.org/site/news-and-events/369-philadelphia-launches-website-to-focus-on-regional-social-innovations-and-social-entrepreneurs>

Simoens, M. C., Fuenfschilling, L., & Leipold, S. (2022). Discursive dynamics and lock-ins in socio-technical systems: an overview and a way forward. *Sustainability Science*, 17(5), 1841-1853. doi:10.1007/s11625-022-01110-5

Social Innovations Journal (2023). *Why a Regional Focus?* Social Innovations Journal Website. Accessed 13-11-2023. <https://socialinnovationsjournal.org/about-sij/background>

Scoones, I., Stirling, A., Abrol, D., Atela, J., Charli-Joseph, L., Eakin, H., . . . Yang, L. (2020). Transformations to sustainability: combining structural, systemic and enabling approaches. *Current Opinion in Environmental Sustainability*, 42, 65-75. doi: <https://doi.org/10.1016/j.cosust.2019.12.004>

Stirling, A. (2015). *Emancipating Transformations: From controlling 'the transition' to culturing plural radical progress*. Retrieved from Brighton.

Strang, V. (2008). Cosmopolitan Natures: Paradigms and Politics in Australian Environmental Management. *Nature and Culture*, 3(1), 41-62. doi:10.3167/nc.2008.030104

Tengö, M., Brondizio, E. S., Elmqvist, T., Malmer, P. & Spierenburg, M. Connecting diverse knowledge systems for enhanced ecosystem governance: the multiple evidence base approach. *Ambio* 43, 579–591 (2014).

Waddell, S., Waddock, S., Cornell, S., Dentoni, D., McLachlan, M., & Meszoely, G. (2015). Large systems change: an emerging field of transformation and transitions. *The Journal of*

Corporate Citizenship (58).

Wassénus, E., Bunge, A. C., Scheuermann, M. K., Resare Sahlin, K., Pranindita, A., Ohlsson, M., . . . Villarrubia-Gómez, P. (2023). Creative destruction in academia: a time to reimagine practices in alignment with sustainability values. *Sustainability Science*. doi:10.1007/s11625-023-01357-6

Wearne, S., Hubbard, E., Jónás, K., & Wilke, M. (2023). A learning journey into contemporary bioregionalism. *People and Nature*, n/a(n/a). <https://doi.org/10.1002/pan3.10548>

West, S., Haider, L. J., Masterson, V., Enqvist, J. P., Svedin, U., & Tengö, M. (2018). Stewardship, care and relational values. *Current Opinion in Environmental Sustainability*, 35, 30-38. doi: <https://doi.org/10.1016/j.cosust.2018.10.008>

Wooltorton, S., Collard, L., Horwitz, P., Poelina, A., & Palmer, D. (2020). Sharing a place-based indigenous methodology and learnings. *Environmental Education Research*, 26, 1-18. doi:10.1080/13504622.2020.1773407

Wyborn, C., Montana, J., Kalas, N., Clement, S., Davila, F., Knowles, N., . . . Ryan, M. (2020). An agenda for research and action toward diverse and just futures for life on Earth. *Conservation Biology*, n/a, (n/a). doi: <https://doi.org/10.1111/cobi.13671>

Endnotes

ⁱIn these texts, and this paper, ‘knowledge systems’ describes the systems of agents, practices, and institutions that organize the production, transfer, and use of knowledge, in line with Tengö et al. (2014).

ⁱⁱThese biases have deep roots. Aristotle, for example, seemed characteristically prescient when suggesting *Phronesis* (practical wisdom, the ability to get things done) is unsuited to thinking via theory and codification because it is inherently contextual. Current discontent with academic knowledge systems to explore sustainability as a practical form of knowledge and how to achieve things like normative change in complex systems and nuanced contexts seem to be reconvening with this conclusion.

ⁱⁱⁱSystem transformation implies fundamental changes to what a system is and how that system functions, while reform is a less powerful type of change (e.g., Waddell et al., 2015). Research into the way new ideas and narratives enter sustainability has noted how some end up becoming captured (or co-opted) by incumbent systems, while others carry and drive fundamental re-arrangements (Simoens et al., 2022).

^{iv}These are especially established at national scales, which is useful, but not synonymous with the benefits and participatory dynamics that are likely from regional scale publications. Social Innovations Journal is itself an example; its original conceptualisation was to be ‘the first regionally focused, volunteer driven online publication and knowledge lab dedicated to social innovators and entrepreneurs’; focused on Greater Philadelphia area, it recognised those voices were often overlooked and saw a need to provide a vehicle to capture and share this knowledge (SIJ, 2023; PHMC, 2023).

^vThere are, for example, promising activities in education about systems change that seek to include diverse types of knowledge and build agency amongst new voices and cohorts to drive change (e.g., Birney et al., 2018; OECD, 2017).