


Towards a unified concept of transdisciplinary research

**Author:**Izak van Zyl¹ **Affiliation:**

¹Centre for Postgraduate Studies, Cape Peninsula University of Technology, Cape Town, South Africa

Corresponding author:

Izak van Zyl,
vanzyliz@cput.ac.za

How to cite this article:

Van Zyl I. Towards a unified concept of transdisciplinary research. *J transdiscipl res S Afr.* 2022;18(1), a1279.
<https://doi.org/10.4102/td.v18i1.1279>

Copyright:

© 2022. The Authors.
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

Read online:

Scan this QR code with your smart phone or mobile device to read online.

Transdisciplinary orientations in research, education and institutions try to overcome the mismatch between knowledge production in academia and knowledge requests for solving societal problems.¹

In 2005, the *Journal for Transdisciplinary Research in Southern Africa (TDSA)* was forged on the concept of transdisciplinarity. Being appointed as the editor of this journal in 2022, I am newly confronted and intrigued by the term transdisciplinarity. I found myself asking – and being asked – what it means for scientific research and its purpose for broader (southern African) society. Thinking about the journal more specifically, what kind of submissions and audience should it attract under a transdisciplinary mantle?

It is (fortunately) outside the scope of this editorial to review the history of the scholarship of transdisciplinarity. That said, it is both a historical and emerging paradigm in the philosophy of science. Scholars such as Piaget² and Mittelstrass³ pioneered the concept in the 1970s and 1980s. Arguably, however, the roots of transdisciplinary thinking in science can be traced back further to when paradigms for understanding complexity started emerging.⁴ There is now a substantive body of transdisciplinary academic work. However, what can we distil as transdisciplinary thinking or paradigm elements? How do these interact with the scientific research endeavour?

I would venture a few propositions at the risk of reducing (or ignoring) the wealth of literature on transdisciplinarity. These are my ideological takeaways from attempting to be a transdisciplinary scholar in southern Africa and must be treated with caution. Firstly, in a transdisciplinary paradigm, (traditional) disciplinary boundaries are fluid and not incommensurate. Fluidity goes to ontological, epistemological, methodological and axiological boundaries – an argument I unpacked in Van Zyl.⁵ The very notion of ‘boundary’ is not valuable for the transdisciplinary paradigm, much like ‘objectivity’ is not helpful in the constructivist paradigm. This is not to say that disciplinary boundaries are non-existent but instead dynamic and permeable.

Secondly, scientific undertakings were – or continue to be – insufficient in scope to address complex real-world problems. These problems include the climate crisis, systemic oppression, poverty, inequality and warfare. And while global, they have countless local, grassroots manifestations. Nevertheless, I would argue that the sciences and humanities are inherently ill-equipped to solve these so-called wicked problems. This is because the sciences and humanities have the necessary mechanisms of self-regulation and ethics; they are rational and rule-bound. To quote personal correspondence between my colleague and friend, Prof. Nic Theo, ‘both [*the sciences and humanities*] seem fundamentally set up epistemically to answer questions that are themselves based on assumptions that clearly definable answers are possible’. Indeed, complex problems function beyond a logical paradigm of rules and are almost always unpredictable. Will it be nihilist or apathetic or blasphemous to conclude that such problems are probably insoluble if it is accepted that there may be no definable answers?

However, if we were to believe we – academics, scholars, researchers, scientists, philosophers – have the genuine ability to solve wicked problems, we need not only work inside, between, with and across disciplines but also beyond them. The scope of transdisciplinarity, therefore, is broad, and its disciplinary nature is to look outwardly. From a research perspective, this means that we should engage not only with an insular academic community but also with civil society, the government, industry and for the lack of a more grandiose term, ‘real people’ with different perspectives, experiences, backgrounds, cultural orientations and moral groundings. Real people would include those at the peripheries of developed society and thought; indigenous

communities and minorities; those subject to being 'othered', exoticised or marginalised.

This type of 'post-scientific' engagement could fall within what has been presented as a quadruple and quintuple helix framework,⁶ where different 'helices' (domains, systems, sectors) interact to innovate around, solve and address complex societal problems. But its practical implementation remains a complex issue, given those same disciplinary and other biases that keep different stakeholders epistemologically, morally and politically comfortable.

From the given discussion, we can deduce that transdisciplinary research is, conceptually at least, a form of engaged scholarship (as my colleague Prof. Chris Burman too would suggest). In this paradigm, we posit that the nature of transdisciplinary research is to function beyond traditional disciplinary collaborations, synthesise diverse insights and develop holistic solutions to complex societal problems. While again wonderfully ambitious in theory, what does it

mean in practice? This is the enigmatic question I would like to pose to the audience – readers, writers and editors – of this journal in the coming years. If we understand what transdisciplinary research is, how do we *do* it?

References

1. Hadorn GH, Hoffmann-Riem H, Biber-Klemm S, et al. Handbook of transdisciplinary research. Dordrecht: Springer; 2008.
2. Piaget J. The epistemology of interdisciplinary relationships. In: Centre for Educational Research and Innovation (CERI) (eds.), *Interdisciplinarity: Problems of teaching and research in universities*. Washington, DC: OECD Publications Center, 1972; p. 127–139.
3. Mittelstrass J. Die Stunde der Interdisziplinarität? In: Kocka J, editor. *Interdisziplinarität: Praxis – Herausforderung – Ideologie*. Frankfurt: Suhrkamp, 1987; p. 152–158.
4. Nicolescu B. Transdisciplinarity: Past, present and future. Lecture presented at: 2nd World Congress of Transdisciplinarity; 2005 Sep 6–12; Vila Velha, Brazil, 2006; p. 1–24.
5. Van Zyl I. Disciplinary kingdoms: Navigating the politics of research philosophy in the information systems. *Electron J Inf Syst Dev Ctries*. 2015;70(1):1–7. <https://doi.org/10.1002/j.1681-4835.2015.tb00501.x>
6. Carayannis EG, Campbell DF. Triple Helix, Quadruple Helix and Quintuple Helix and how do knowledge, innovation and the environment relate to each other?: A proposed framework for a trans-disciplinary analysis of sustainable development and social ecology. *Int J Soc Ecol Sustain Dev*. 2010;1(1):41–69. <https://doi.org/10.4018/jsesd.2010010105>