

Learning to Change Our World View Creating Symbiotic Collective Transdisciplinary Wisdom in the Metacrisis

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Abstract: *Deep transdisciplinary learning is essential to responding to the current collapse of human societies and ecosystems and to building a more sustainable, just future for all living creatures. Our modern civilizations, which are built around ideas of never-ending technoscientific progress and neoliberal values of market fundamentalism, and individualism, are destroying planetary health. Fundamental shifts in ethics and thinking about our relationships to nature and each other are needed to prevent our species from joining the human accelerated Sixth Extinction. Lifelong learning based on emotionally powerful and joyful experiences needs to focus on the complexly interconnected issues that constitute the social, political, economic, and ecological-based metacrisis. Universities need to transform through supporting the boundary exploration and future-orientated nature of transdisciplinary scholarship. Intergenerational teams embedded in the community congregated around tables rather than solo professors occupying chairs may be a creative vehicle for organizational transformation. Experiences with transdisciplinary programs at Case Western Reserve University, University of Oxford, Brown University, and Johns Hopkins University will be described that demonstrate a diversity of responses to the challenges of academic reorganization in the metacrisis, but also showcase common border spanning activities and commitment to innovative and socially transformative, transdisciplinary scholarship.*

University of Oxford, Brown University, and Johns Hopkins University will be described that demonstrate a diversity of responses to the challenges of academic reorganization in the metacrisis, but also showcase common border spanning activities and commitment to innovative and socially transformative, transdisciplinary scholarship.

Keywords: *transdisciplinarity, professorship, future, wisdom, symbiotic, learning, intergenerational.*

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1. Introduction

Throughout history humans have increasingly congregated in larger groups driven by agricultural, industrial, and other technological innovations. Our civilizations have become increasingly urbanized and, in the process, have contributed to ecosystem failures by, for example, destroying forests and aquatic systems¹. Collective learning has been essential to culture change and social transformation and has historically enhanced our abilities to access so-called natural resources, like fossil fuels. However, modernity and its inadequately regulated and growth-oriented economies are not sustainable². To adapt and change our behaviors as a species we not only need new knowledge but also relearn old wisdoms from Indigenous peoples³.

Today we have exceeded planetary boundaries and damaged, probably irreversibly, many of the support systems upon which life depends. Modern civilizations based on unregulated markets, personal greed, and conceptions of unlimited progress and development are unsustainable. They are the root causes of income inequity and social injustice⁴.

Today we need to wise up to the limits of our knowledge and unlearn many habits that are deeply ingrained in our modern repertoire of behaviors, like consumerism and materialism. Understanding how we learn and unlearn will be critical for our survival in the human-caused sixth extinction in which all species including our own are threatened. Unlearning some of our current destructive attitudes and behaviors will be the foundation of a limit-respecting wisdom. The geologists of the world have recently rejected the idea that we are entering a new geological epoch called the Anthropocene, but we are still in an anthropogenic event where humans are increasingly dominating (and destroying) ecosystems.

We learn best together so that enhancing our abilities to learn will be based not only on individual actions but also how we organize learning. So-called higher education, such as colleges and universities, has dominated our sense of

¹ Jeremy Lent, *The Patterning Instinct: A Cultural History of Humanity's Search for Meaning*, Amherst, New York, Prometheus Books, 2017, p. 53; Jeremy Lent, *The Web of Meaning: Integrating Science and Traditional Wisdom to Find Our Place in the Universe*, Burlington, Ontario, Society Publishers, 2021, p. 51; Jem Bendell, *Breaking Together – a freedom loving response to collapse*, London, Good Works, 2023, p. 42.

² Basarab Nicolescu, *From Modernity to Cosmodernity: Science, Culture, and Spirituality*, New York, SUNY Press, 2014, p. 57; Basarab Nicolescu, *Transdisciplinarity: Theory and Practice*, Cresskill, NJ, Hampton Press, 2008, p. 24.

³ Darcia Narvaez and Wahinkpe Topa, *Restoring Kinship World Views: Indigenous voices introduce 28 precepts for rebalancing life on Planet Earth*, Berkeley: North Atlantic, 2022, p. 64.

⁴ Peter Whitehouse, 'Emergent Cosmic Return: The Field of Possibilities for Aging in a Proposed New Geological Epoch,' in *Aging Studies and Ecocriticism*, ed. Nassim Balestrini, et al., Lexington: Lexington Books, 2023: 201-224.

the ultimate nature and goals of learning. The PhD degree is viewed as the epitome of learning. Although ostensibly a label for someone who embraces ‘love of wisdom’, the degree has increasingly been associated with narrow expertise in specific disciplines. New ways of thinking about learning that emphasize depth and generality are necessary to address the current complex predicament the world faces. Our challenges do not neatly fit into the boxes into which university training places us (often with a goal of producing human widgets to support corporate capitalism). The words polycrisis and metacrisis signal the complexities of the interconnected ‘problems’ we are facing, but they are beyond even the label ‘wicked problems’ because the so-called solution spaces to these crises extend over different disciplines and fields of endeavor. The ecological crisis is complexly linked to social injustice, political instability, and economic concerns. Polycrisis implies a crisis with multiple components, Metacrisis suggests a level of criticality that is emergent requiring more fundamental shift in world view to address than the prefix ‘poly’. As the Chinese concept and ideograph of ‘crisis’ suggest, however, crisis includes both danger and opportunity⁵.

Educational systems have become co-opted by approaches that emphasize data-driven, scientific evidence (without skeptical appraisal) and economic values. They are based on models of learning that are primarily rational and content driven. Powerful learning cannot occur without human emotions and a grander sense of meaning and purpose. A love of learning is central to being a curious biological creature that has the capability of adapting individually and collectively to changes in the environment. Humans have excelled at their ability to learn together but also often lost the joy that should be associated with learning deeply about other human beings, other living creatures, and the natural systems to which we belong. Learning is more about process than about content. How you learn is as important as what you learn, because it is the basis of learning in the future. A new spirit of learning is emerging in societies that are rejecting materialism as a foundation for living a good life. In our post-secular era learning itself is increasingly being viewed as an enchanting, magical activity, full of joy and play, not just seriousness and work⁶.

2. Nature of Learning

Learning involves a change in the state of the organism in response to information from the environment or an internal reflection upon and reorganization of knowledge already available to the organism. Learning can be viewed as a cycle of activities in which experience leads to reflection which in turn leads to a changed state which causes new behaviors to emerge which then allow new

⁵ Jeremy Lent, *op. cit.*, 2021, p. 51.

⁶ Nicholas Brennecke, Farah Almhana, Peter Pesch, and Peter Whitehouse, *Wising Up: Designing a Course for the Future: A Report on a New Transdisciplinary and Intergenerational Course* *Journal of Intergenerational Relationships* (2020): 465–469.

learning to occur and so on. Learning experiences can occur in classrooms and through existing ways we teach formally, but they also occur as part of life activities, which may not be labeled as educational. It is hard for humans not to learn; it is difficult to say I am not going to learn from a specific experience. It is also hard for humans to unlearn because learning gets incorporated into habits of mind and body which often occurred automatically without conscious awareness. Culture represents shared habits of collective behavior that are also difficult to resist.

Learning with purpose can enhance the likelihood of meaningful change. Are you motivated to help yourself and others through service learning? If you add in enjoyment to goal directedness, then education becomes emotionally charged and hence likely to be deeper and more enduring. Learning should be based on ethical values that reflect just relationships between humans and other living creatures⁷.

Learning from and with others who have had different life experiences can be particularly transformative as one can learn vicariously from the lessons learned by others. Intergenerational learning can be particularly powerful because new and old eyes at different points in the life journey (for example, pre-career or post-career) often see the world differently based on different experiences⁸). Mentoring is a form of mutual commitment in a relationship that can be life changing for both parties. Technology can create both deep and superficial learning opportunities. Virtual reality, transmedia and now so-called artificial intelligence are all transforming learning. Combining human and computer information processing can create powerful cooperative symbiotic wisdom⁹.

Transdisciplinary is a concept that challenges existing ways of learning in the intellectual boxes we call disciplines¹⁰. Before the divisions and specializations of the sciences and humanities, emerged intellectual endeavors were less structured into narrow categories. Broader endeavors, such as natural philosophy and natural history, once thrived. Alexander von Humboldt was an example of a polymath who explored the world with his scientific instruments as well as his narrative, artistic, and cultural skills. His five-volume treatise entitled *Cosmos* represented an effort to unify his findings into a grand vision¹¹. He sought what

⁷ Van Potter and Peter Whitehouse, 'Deep and Global Bioethics for a Livable Third Millennium,' *The Scientist* 12: (1998) no. 1:9; Cheryl Macpherson (ed.) *Bioethical Insights into Values and Policy: Climate change and health*, New York, Springer, 2016, p. 75.

⁸ Daniel George, Catherine Whitehouse, and Peter Whitehouse, 'A Model of Intergenerativity: How the Intergenerational School is Bringing the Generations Together to Foster Collective Wisdom and Community Health,' *Journal of Intergenerational Relationships* 9, no. 4 (2011): 389–404; Daniel George and Peter Whitehouse, *American Dementia: Brain Health in an Unhealthy Society*, Baltimore, Johns Hopkins, 2021, p. 19.

⁹ Peter Whitehouse, 'Symbiotic Wisdom: weaving the fabric of the future' in Artificial Intelligence and Human Mediation eds. Martins da Costa Leonardo da Silva Guimarães and Loisel Mariana Theiriou, *The Atlas*, 2024, p. 17.

¹⁰ Basarab Nicolescu, *op. cit.*, 2008, p. 60.

¹¹ Peter Whitehouse, *op. cit.*, 2023, p. 203.

has been called consilience, a unity of knowledge. Modern science has not only been segmented into individual categories, but also strongly influenced by the dominant economic models which emphasize intellectual property and instrumental value and profit from research. Science has become a larger-than-life source of faith in modern society, where it is sometimes claimed to be the only important ways of knowing. Scientism is a religious zeal for science that ironically can impair criticality and skepticism which is fundamental to science. Under this cultural influence, science and scientists can become instruments for corporate domination of value systems and the pressure to publish (or perish) led to major problems with the replication and veracity of scientific findings. Indigenous ways of knowing, for example, emphasizing kinship with each other and other living creatures and celebrating the power of stories to center our cultural and cosmological understanding offer world views that challenge the limited reductionism views of many contemporary perspectives¹². Increasingly the arts are being seen as a powerful player in the transformation of modern culture, a role they have played for eons¹³.

3. Future of Universities

In some ways universities represent the epitome of learning organizations. Often well-endowed by alumnae and supported by government and corporations, universities have been enduring structures on the landscape of modernity based on ideas from the much celebrated, but perhaps overly rational, Western Enlightenment. The roles of universities have been increasingly challenged from many different political, economic, and social perspectives¹⁴. Neoliberalism has come to influence universities just as it has many other social institutions, like health care. The power of administrators has increased, as the rights and responsibilities of the faculty diminished. Universities are being pushed to graduate productive workers as much as thoughtful citizens. The opportunities for universities to provide social spaces for critical and diverse discussion of contemporary issues are being challenged. Academic freedom is under threat.

Many are looking for alternative forms for adult education and lifelong learning. Alternative models for less rigidly structured universities have been proposed and tested¹⁵. For-profit models have in general yielded poor educational outcomes. A variety of online models continue to explore higher learning with broader missions, often focusing on the climate crisis, social injustice, and others

¹² Darcia Narvaez and Wahinkpe Topa, *op. cit.*, 2022, p. 72.

¹³ Peter Whitehouse, 'Transdisciplinarity at the boundaries: exploring a sylvan metaphor for health,' *The Atlas* 10 (2019): 39–45.

¹⁴ Marcus Ford, *Beyond the Modern University: Toward a Constructive Postmodern University*, Westport, Connecticut: Praeger, 2002, p. 64; David J. Staley, *Alternative Universities: Speculative Design for Innovation in Higher Education*, Baltimore, Johns Hopkins University Press, 2019, p. 53.

¹⁵ David J. Staley, *op. cit.*, 2019, p. 54.

too often neglected issues.

4. Transdisciplinary Professorship/Fellowship

Transdisciplinarity emphasizes going between categories to go beyond to create actionable knowledge. Hence it is potentially transgressive in celebrating the borders among disciplines rather than the disciplines themselves. Interdisciplinary leaves the basic disciplinary structures unchallenged. Boundaries (just as in ecotones between ecosystems) are seen as creative spaces for the evolution of new ways of thinking and valuing. Transdisciplinarity comes in different forms. The less radical Zurich school focuses on science and engineering and problem solving. The Paris School (CIRET- International Center for Transdisciplinary Research¹⁶) entertains the poetic and artistic side of transdisciplinarity, as well as proposing new epistemological methodologies, such as identifying in-between spaces called the hidden third. One book by the founder of the Paris School, Basarab Nicolescu, titled *Theoretical Poems*, points to this effort at broad, domain spanning thinking¹⁷.

But we must be careful of placing transdisciplinarity in university structures using old forms. Is a transdisciplinary chair (professorship) the way to go? Here I propose a transdisciplinary table, not a chair, in which a group of people of different disciplines and ages would act as a diverse but unified team to explore concepts and propose actions. Engagement with the local and global community would be essential. Museums could well be important partners. Nature centers, botanical gardens, arboretums, and farms could be incorporated as relationships to nature and the climate crisis should be one consistent focus of the activities of the transdisciplinary table. Developing plans to disseminate shared learnings through innovative, more than typical academic means, like journal publications, would be part of the plan. Different forms of narrative perhaps using a variety of transmedia approaches would be encouraged. Groups might compete for time limited but stable endowed resources from the central administration of the university. Innovation would be a theme encouraging playfulness and risk taking.

5. Examples of Transdisciplinarity in action (or not)

Case Western Reserve University. The concept of transdisciplinarity has emerged in different places at my home university, Case Western Reserve University, but without a consistent focus over time. For example, theoretically all federally funded National Cancer Institute-designated cancer centers (including the one of Case) are supposed to include transdisciplinary programs. But how that commitment is clearly differentiated from interdisciplinarity efforts is not clear.

¹⁶ https://ciret-transdisciplinarity.org/index_en.php, accessed May 25th, 2024.

¹⁷ Basarab Nicolescu, *op. cit.*, 2014, p. 71.

The Department of Cognitive Science in the College of Arts and Sciences¹⁸ was founded on transdisciplinarity principles. Through this department I have organized international meetings on transdisciplinarity including a program on the future of universities for the 2021 international CIRET meeting. I have also taught courses on intergenerational wisdom focusing on learning from the historical and physical attributes of the campus itself and with elders and youth collaborating on imagining and designing the future. The concept of scale in our work is captured in our emphasis on glocality – thinking and acting both globally and locally. Our work in health includes both planetary health and earth systems science perspectives, as well as bioregional work on our own watersheds and their ecosystems and human histories, including Indigenous perspectives.

University of Oxford. During my several fellowships at Oxford, I discussed the idea of transdisciplinarity in many different contexts. Probably the most prominent organizational unit in which I participated that qualifies in my mind as transdisciplinary is the Oxford Martin School¹⁹. Its emphasis on addressing complex global problems, involving environment, economics, biodiversity, food, plastics, etc. fit with transdisciplinary approaches. The school is populated with academics from different backgrounds, including Oxford faculty and students, as well as many visiting researchers. However, in conversation with leadership, the complex language and methodologies associated with transdisciplinarity did not encourage its use as a word and concept. So unlike Case which considered the concept but did little to promote it, the Oxford Martin School did a lot but did not use the concept.

Two programs that use the term transdisciplinary in describing their conceptual frameworks and practices have attracted my attention because they are at universities from which I have graduated and interacted with over my entire academic career: Brown University (A.B. 1971) and Johns Hopkins University (MD-PhD 1976-77). I am studying how they organize themselves within their specific academic environments, how they engage the community in addressing the environmental and social challenges that our species faces, and how they put the concept of transdisciplinarity to work.

Brown University. Brown University's Institute at Brown for Environment and Society²⁰ (IBES) was founded in 2014 to advance 'durable, scalable, and equitable solutions to the complex climate, sustainability and environmental challenges of the 21st century'. The director reports to the provost signaling its pan-university engagement. They use the terms interdisciplinary and transdisciplinary on their web site and in their 2023–2028 strategic plan²¹. But they do call out the importance of transdisciplinary scholarship in this paragraph from their

¹⁸ <https://case.edu/artsci/cognitivescience/about/mission>, accessed May 25th, 2024.

¹⁹ <https://www.oxfordmartin.ox.ac.uk/>, accessed May 25th, 2024.

²⁰ <https://ibes.brown.edu/>, accessed May 25th, 2024.

²¹ <https://ibes.brown.edu/sp.home>, accessed May 25th, 2024.

plan: *What is transdisciplinary scholarship?* The IBES Strategic Plan makes repeated reference to ‘transdisciplinary’ learning and research, whereby knowledge and approaches from different academic disciplines and different sectors are combined to advance solutions to the most complex challenges, in close partnership with stakeholders. ‘Transdisciplinarity today is characterized by its focus on “wicked problems” that need creative solutions, its reliance on stakeholder involvement, and engaged, socially responsible science’ IBES aims to harness the transformative potential of transdisciplinary research and education in accelerating its impact over the next five years and beyond.

Johns Hopkins University. Johns Hopkins University’s Institute for Planetary Health²² was founded in 2024 so it is early in its organizational life. Its emphasis is to make Hopkins a global leader in addressing, ‘the global health and humanitarian dimensions of the Earth crisis’. The Hopkins Institute is linked to the Planetary Health Alliance (PHA)²³, a group of 420 member organizations in 70 countries that was established in 2015. The word transdisciplinary (or trans-disciplinarity) only appears once of the web site of the Hopkins Institute, but 17 times in the new report from the PHA called Growing Green Hearts. Although transdisciplinary is not specifically defined, it is characterized by cross boundaries, communities, action projects in the service of addressing complex interrelated challenges: transdisciplinary research typically involves a synthesis of knowledge from various disciplines, often with the aim of addressing real-world challenges that cannot be adequately tackled within the confines of any single discipline. This approach recognises the interconnectedness of different domains of knowledge and seeks to foster interdisciplinary dialogue and cooperation to tackle complex issues more effectively. From Planetary Health: Roadmap and Action Plan²⁴.

6. Conclusions

Transdisciplinary thinking and valuing can drive innovation in lifelong learning. It must be based on a clear commitment to address both large- and small-scale aspects of the metacrisis. Intergenerational teams should be the basis of pedagogical efforts based on the metaphor of creating tables rather than individually occupied professorial chairs. Commitment to support these kinds of transdisciplinary programs should be high level and deeply rooted.

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²² <https://planetaryhealth.jhu.edu/>, accessed May 25th, 2024.

²³ <https://planetaryhealthalliance.org/>, accessed May 25th, 2024.

²⁴ <https://www.planetaryhealthalliance.org/roadmap>, p. 41, accessed May 25th, 2024.

in our research is deeply appreciated. Any errors or omissions are my own.

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II. Links to organizational web sites

1. CIRET Homepage - https://ciret-transdisciplinarity.org/index_en.php.
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6. Planetary Health Alliance - <https://planetaryhealthalliance.org/>.