



# Down to Earth Transdisciplinarity

## Response to 'The Struggling Towards a Transdisciplinary Metaphysics' (Gibbs 2021)

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### Introduction

Transdisciplinarity as a way of thinking, researching, and educating invites us to think very differently about knowledge: where it comes from and how it is selected, constructed, produced, verified, synthesised, disseminated, and taught. It poses a challenge to education and research about the distinctions we make between different branches of knowledge, such as sociology, philosophy, the sciences, art, and mathematics, for example, and the disadvantages of compartmentalisation of traditional disciplines. Transdisciplinarity also challenges us to question why we privilege certain kinds of knowledge and their methods of inquiry over others. There may be a degree of disdain for the teaching of spirituality because belief in transcendental beings and their activities cannot be proved, only asserted as an article of faith, whereas research in physics can be demonstrated: The discipline has established and respected scientific methods which can be assessed for rigour, validity, and replicability. Nevertheless, whatever one thinks about spirituality, it speaks to, and about, the human condition, as well as about the human imagination and creativity, and the need for human experience that transcends the ordinary.

The term 'transdisciplinarity' was probably first used by Piaget (1972: 138) who defined it as a 'higher stage succeeding interdisciplinary relationships ... which would not only cover interactions or reciprocities between specialised research projects but would place these relationships within a total system without any firm boundaries between the disciplines'. Montuori (2008: ix) explains that transdisciplinarity is 'a new way of thinking about, and engaging in, inquiry'.

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Given the nature of the global problems we face as a result of climate change, mass migration, conflict, water quality, the degradation of land and loss of biodiversity – the simple (if complex) facts our global connectedness – there are, critically, very clear ethical and moral dimensions about how we inquire into, and organise knowledge, and the purposes to which it is put. The scale of the problems we confront cannot be tackled successfully by specific disciplines and current modes of enquiry. These are ‘wicked messes’ (McGregor 2015): They are intractable and defy simple definitions and simple solutions. At the heart of the transdisciplinary enterprise is the absolute respect for the person, our human connectedness, and that we inhabit one earth. Transdisciplinary knowledge that does not take account of the (perilous) human condition will fail to improve life and human flourishing.

Transdisciplinary thinkers and pioneers, such as Basarab Nicolescu and Edgar Morin, recognising that the world is simply too big and far too complex to know just by disciplinary knowledge alone, have created new principles, criteria, or articles to further knowledge. Nicolescu, a theoretical physicist, is perhaps one of the most influential thinkers in this area. His concept of transdisciplinarity avows complexity, a fundamental feature of human life, on the basis that life consists of different levels and dimensions of reality: subjectivity, objectivity, and the ‘hidden third’ between the subject and object. The hidden third is an interaction term which permits the ‘unification of the transdisciplinary Subject and the transdisciplinary Object while preserving their difference’ (Nicolescu 2012: 13).

Together with Morin and de Freitas, a Portuguese artist, Nicolescu devised the ‘Manifesto for Transdisciplinarity’ (Nicolescu 1992) which consists of 14 articles. Article 3 states that transdisciplinarity complements disciplinary approaches and offers ‘a new vision of nature and reality’. It does not attempt ‘mastery of several disciplines’ but ‘aims to open all disciplines to that which they share and that which lies beyond them’.

Article 5 calls for dialogue between the sciences, the humanities, and the social sciences, along with art, literature, poetry, and spiritual experience. Article 8 explicitly asserts the dignity of human beings, who, as inhabitants of Earth, are transnational and transcultural—no culture is privileged over another (Article 10). Shared knowledge should result in shared understanding of the ‘absolute respect for the collective and individual’. Finally, in Article 4. ‘*[r]igor, opening and tolerance* are the fundamental characteristics of the transdisciplinary attitude and vision’ (Nicolescu 1992) (emphases from the original).

## Lessons for Transdisciplinary Education

Education, as a field, must play a role in the transdisciplinary project since it houses all the disciplines, organises how they are taught and learned, and confers status on students and researchers by way of qualifications. Morin (1999), a French philosopher, was invited by UNESCO to think transdisciplinarily about a sustainable future in a very uncertain world. Premised on the ideas of social justice, democracy,

environmental harmony, uncertainty, and the predominant role of education globally, Morin offers seven complex lessons for education for the future.

1. Detecting error and illusion. Education, Morin argues, is blind to knowledge though it teaches (transmits) knowledge. It ‘doesn’t bother to teach what knowledge is’ (Morin 1999: 1).
2. Principles of pertinent knowledge. Organising knowledge into disciplines means that we cannot connect the parts to the whole; education should be so organised that we understand the mutuality of different bodies of knowledge and their reciprocal influences.
3. Teaching the human condition. Human beings are ‘physical, biological, psychological, cultural, social, historical beings’ (Morin 1999: 2). However, this ‘complex unity of human nature’ has been so thoroughly ‘disintegrated by education divided into disciplines, that we can no longer learn what human being means’. We need to restore this awareness, Morin argues, ‘so that every person can become aware of her complex identity’. We need, further, to recognise our human unity and complexity by ‘assembling and organising knowledge dispersed in the natural sciences, social sciences, literature, and philosophy, to demonstrate the indissoluble connection between the unity and the diversity of all that is human’ (Morin 1999: 2).
4. Earth identity. In this lesson, we must understand that we all ‘face the same life and death problems and share the same fate’ (Morin 1999: 2). Climate change and environmental degradation affect us all. We are situated now on a planetary scale.
5. Confronting uncertainties. We tend to teach about certainties—what can be known for certain. Education should teach and prepare us to deal with chance and uncertainty in human lives.
6. Understanding each other. We need to know how misunderstanding results in racism, xenophobia, and discrimination. An education for understanding would form a base for education-for-peace.
7. Ethics for the human genre. This is a call for world citizenship. We need an ‘awareness that a human being is at one and the same time an individual, a member of a society, a member of a species. Every individual carries this triple reality within himself’ (Morin 1999: 3).

Transdisciplinary thinking offers exciting possibilities for new approaches to finding solutions to persistent and urgent problems. However, there are significant practical problems to realising research that is truly transdisciplinary given how universities and schools are organised, and the pressure that teaching staff and researchers are under to meet targets, get through the curriculum, achieve desirable pass marks, publish, and obtain fiercely competitive grant income. Further, education is still predominantly unidisciplinary (single subject focus), while continual and rapid advances in knowledge necessarily means that specialism is the logical outcome.

For example, in medical education in the UK, university students tend to be educated in the major clinical specialities, the ‘-ologies’ such as cardiology, endocrinology, hepatology, and haematology (Wynford-Thomas 2012). Each speciality organises its own form of teaching and research, sometimes around cognate subjects, such as the cardiovascular and respiratory sciences. [How this is organised will vary from university to university. See Wynford-Thomas (2012).] Highly specialised knowledge means, of course, that the cardiologist or hepatologist become experts and that their research informs teaching, diagnosis, treatment, and clinical practice. However, this (unavoidably) compartmentalised approach to understanding and treating disease presumes that the organs of the body and its functions operate independently of each other, as if they were closed biological systems.

The consequences of a highly specialised medical education and training are that patients with complex and chronic medical problems may not be treated holistically but be examined by separate specialists. A friend who contracted two rare viral infections has seen, over the last decade, a virologist, cardiologist, and haematologist. As the medical problems increased in complexity (because of the effects of different treatments), the range extended to a urologist, pulmonologist, hepatologist, and neurologist. As of now, the treatment is still fragmented, and the medical complexities are unabated.

A transdisciplinary approach, of the kind discussed here, would do several things: bring together a panel of specialists to consult on expertise; debate aetiology, integrate and synthesise knowledge; and include the experiential knowledge of the patient; translate the findings into effective policies and practices aimed at schools, public health administrators, product designers, and other consumers of evidence (Klein 2014).

## **Gibbs’ (2021) Struggles Towards a Transdisciplinary Metaphysics**

The preceding discussion seeks to set out some of the basic but practical aims and aspirations of transdisciplinarity, while acknowledging the phenomenally complex nature of disciplinary knowledge. Transdisciplinarity is a rich and burgeoning area of research and signals how we can address many of our intractable, human-made problems. Gibbs (2021) also seeks transdisciplinarity, but his approach is metaphysics, a new reality of being/not-being. Transdisciplinarity in rising above the ‘hegemony’ of the disciplines becomes, Gibbs (2021) suggests, the ‘sole arbiter of the real’. A metaphysical enquiry is how we can *know* what reality really is. This claim, however, might strike the reader as too confidently assertive. If transdisciplinarity is aimed at being the ‘sole arbiter of the real’, then its very aims and purposes would fail since this method of inquiry would sink into dogmatism.

In any case, transdisciplinarity is not always the most appropriate form of enquiry (e.g. teaching a child to learn subtraction). As ‘sole arbiter of the real,’ transdisciplinarity would become another means to assert dogmatism, a situation that Gibbs would surely oppose. Keeping in mind what thinkers such as Nicolescu (1992), Morin (1999), or McGregor (2015) propose, it is a struggle to consider how it could

be the sole arbiter, given what is involved in transdisciplinarity (all the disciplines we can name, contributors from outside the academy, openness to the unknown, the seeking of new and unexpected connections, being mindful of the necessity of plurality). However, I may have poorly read Gibbs on this point.

It may be that I have focused too much on the practical aims of transdisciplinarity to consider how to deal with messy problems that the purpose of an abstract treatment of Being eludes me. It is not clear to me either how Gibbs (2021) account of how immanent knowledge resulting from an immanent Being's activities enable us to work beyond established disciplinary boundaries. A preliminary discussion of what is meant by the unity of Being, immanence, and transcendence would have been helpful, especially given that the purpose of Gibbs' commentary is to offer an account of transdisciplinarity and its relationship to a metaphysics of being. To appreciate what Gibbs is trying to propose means that the reader (some readers) must understand something about the metaphysics of causation—what a world of causal relations looks like, and whether causal relations are immanent (concrete and becoming) or transcendent (abstract).

Reference to Aristotle's metaphysics of what a thing is, its potentiality and function, is also puzzling in the context of the kind of transdisciplinarity I outlined above. I do, however, think that Gibbs' analysis points to the possibilities of what a person can actually do and be in a given context, including structural or systemic constraints, which may include the barriers imposed by disciplinary knowledge (these may be the non-abstract causal constraints of becoming). Gibbs discusses 'Jane', who is first a human, and who uses her 'capacity' (her knowledge) to be an engineer. This, Gibbs explains, is her 'actuality'—what she can actually be (an engineer) and do (engineering)—or so I take it.

The discussion of actuality then moves to causality. Are we to read that causality (or knowledge) brings about actuality (becoming an engineer)? I am not sure. However, attributing causality requires careful consideration of a host of complexly interacting phenomena and events—class, gender, familial care, motivation, social and political structures, and prevailing ideology, to name only a few. Correlation is often more appropriate and explicable than causation (but I appreciate I may be reading Gibbs too literally).

Even after several readings, Gibbs' serious treatment of scholastic or Aristotelian causes, functions, and capacities does not practically explain what this kind of metaphysical enquiry means for overcoming the well-recognised problems of disciplinary knowledge. These include fragmentation, hyperspecialisation, compartmentalisation, reductionism, linear thinking, subjectivism, and narrow world-views. It is on account of these problems that researchers are obliged to state the limitations of their research enquiry and that their interpretations and conclusions are necessarily contingent, given our limited, spatio-temporal world views, research designs, and methods.

A further puzzle, for the practically (but perhaps unimaginatively) minded, is the deployment of scholasticism in the transdisciplinary quest. Gibbs, drawing on Scotus, appeals to a unity, a universal, or a One. Thus, 'the concepts of being; the one, trust, and the good are all unitive contenta in the real and indivisible whole' (Scotus 1997: 101 in Gibbs 2021). Metaphysical enquiry seems to seek an

omnipotence of thought, one that renders knowledge more than human, so far as I read it. How unitive contenta achieve can diversity is also not clear, but may be possible if the concept stands for transdisciplinarity and all the modes of enquiry it entails—provided, of course, that its conclusions and solutions are contingent.

Gibbs (2021) also wants to show how scholasticism can offer a method of enquiry in which different views are considered and given credence (or not), without ‘proscribing disciplinary methods to realise action’. On this latter point, I agree. Transdisciplinarity must remain open and flexibly responsive to methods that seek news ways of knowing. However, how is this different from what normally goes on when we make knowledge claims from within or between disciplines? The issue is not, I think, that disciplines aim at knowledge once and for all, but that they work on the premise that the possibility for certainty is limited and, as I said above, contingent. The issue might be, as Gibbs (2021) has diagnosed it, that researchers are ‘not willing to jettison their disciplinary positionality to look for something which cannot be realised from what we currently accept as knowledge’. The metaphysics of causality may not be the answer either, at least not as it is presented here.

## Conclusion

My own struggle with Gibbs (2021) conception of the person is that she is human, not (practically, at least) transcendent or immanent, though I am entirely with him that we categorically need to be less anthropocentric. In the West, we have been too self-indulgent, too selfish, and far, far too confident of our right to dominion over land, animals, flora, and peoples (the problem of the God-given right to have such dominion—or so we were led to believe). Our future seems very uncertain. I am not certain what kind of assistance transdisciplinary metaphysics offer us, but, as I agreed above, proscribing methodologies is not the answer either, however, arcane or abstract they may (first appear) to be.

We can agree that disciplinary epistemologies can be severely limited by their hyperspecialised, compartmentalised approaches to knowledge. Their aim is not, I think, to seek absolutes or to end the possibilities for scepticism (or what qualifies *as* knowledge). Such a quest would not be realistic given that, as transdisciplinarians realise, realities are complex, in flux and emerging (this may be what Gibbs means by when he says that ‘emergence’ is a feature of human life). Transdisciplinarity offers an alternative approach, but it requires concerted, committed action, and participation by agents/researchers who understand that mediation or movement between different realities is necessary.

How ready are we for transdisciplinarity? I am not sure, but ready or not, we live in the age of ‘knowledge capitalism’ (Peters et al. 2020: 1), and its intractable global problems. Transdisciplinary approaches entail, in my view, the kind of collective responses that are captured by Peters et al. (2020). That is, large networks of scholars who embrace experimental approaches to knowledge acquisition, who are radically open to new ideas, and who engage in ‘knowledge socialism’ to

‘marshal[s] public and private financial and administrative resources to advance knowledge for the public good’ (Peters et al. 2012: 8).

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