



Discourses of transdisciplinarity: Looking Back to the Future



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ABSTRACT

The current ascendancy of transdisciplinarity (TD) is marked by an exponential growth of publications, a widening array of contexts, and increased interest across academic, public and private sectors. This investigation traces historical trends, rhetorical claims, and social formations that have shaped three major discourses of TD: transcendence, problem solving, and transgression. In doing so, it also takes account of developments that have emerged or gained traction since the early 21st century when a 2004 issue of *Futures* on the same topic was being written.

The epistemological problem at the heart of the discourse of transcendence is the idea of unity, traced in the West to ancient Greece. The emergence of transdisciplinarity was not a complete departure from this historical quest, but it signalled the need for new syntheses at a time of growing fragmentation of knowledge and culture. New synthetic frameworks emerged, including general systems, post/structuralism, feminist theory, and sustainability. New organizations also formed to advance conceptual frameworks aimed at transcending the narrowness of disciplinary worldviews and interdisciplinary combinations of approaches that did not supplant the status quo of academic structure and classification.

The discourse of problem solving is not new. It was fundamental to conceptions of interdisciplinarity in the first half of the 20th century. Heightened pressure to solve problems of society, though, fostered growing alignment of TD with solving complex problems as well as trans-sector participation of stakeholders in society and team-based science. The discourse of transgression was forged in critique of the existing system of knowledge and education. TD became aligned with imperatives of cultural critique, socio-political movements, and conceptions of post-normal science and wicked problems that break free of reductionist and mechanistic approaches. It also became a recognized premise in interdisciplinary fields, including cultural studies, women's and gender studies, urban studies, and environmental studies. And, calls for TD arrived at a moment of wider crisis in the privileging of dominant forms of knowledge, human rights accountability, and democratic participation.

Even with distinct patterns of definition, though, discourses are not air-tight categories. Transcendence was initially an epistemological project, but the claim of transcendence overlaps increasingly with problem solving. The imperatives of transgression also cut across the discourses of transcendence and problem solving. Broadly speaking, though, emphasis is shifting from traditional epistemology to problem solving, from the pre-given to the emergent, and from universality to hybridity and contextuality.

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1. Introduction

In 2004, when a special issue of *Futures* took stock of prospects for transdisciplinarity (TD), the concept was not widely recognized. Even so, the editors and authors were optimistic about its future. Ten years might seem a short time to conduct another assessment of prospects. Despite widespread talk of “transformation” and “revolution,” the academic world rarely moves that fast or its outcomes take root in other sectors of society. However, the current ascendancy of transdisciplinarity is marked by an exponential growth in publications, a widening array of disciplinary and professional contexts, and increased interest in science–policy bodies, funding agencies, and public and private spheres. This contribution to a new special issue traces three major discourses of transdisciplinarity: transcendence, problem solving, and transgression. In doing so it also takes account of new examples that have emerged or gained traction or since the early 21st century when articles for the 2004 issue were being written.

The methodology of this investigation–discourse analysis–spans a range of approaches. Objects of study range from sentences and conversations to full arguments and social practices. Discourse analysis appears across a wide range of disciplines in social sciences and humanities and in interdisciplinary fields such as communication studies. It also ranges across a spectrum of quantitative and qualitative approaches. On the quantitative end of the spectrum, empirical studies often follow the structure of scientific articles: with an introduction followed by results, discussion, and conclusions. This study lies at the qualitative end of the spectrum. It is a rhetorical analysis of the language and argument of transdisciplinarity, with emphasis on historiographical and sociological analysis of the boundary work of defining TD. Boundary work is a composite label for the claims, activities, and structures by which individuals and groups work directly and through institutions to create, maintain, break down, and reformulate between knowledge units (Fisher, 1993). Historiographical analysis uncovers genealogies of origin, benchmark events, and shifts in meaning over time, while sociological analysis examines how practices are defined and sanctioned in networks and organizations.

To begin with historical perspective, the emergence of transdisciplinarity is dated conventionally to the first international seminar on interdisciplinarity (ID), co-sponsored in 1970 by the Organization of Economic Cooperation and Development (OECD). In the influential typology created for that meeting, TD was defined as “a common system of axioms for a set of disciplines” that transcends the narrow scope of disciplinary worldviews through an overarching synthesis. The example was anthropology conceived as a broad science of humans, although three participants sketched a fuller picture of TD. Andre Lichnerowicz advocated “the mathematic” as a universal interlanguage and common structure anchored in the deductive sciences of logic, mathematics, and information theory. Jean Piaget also believed that maturation of general structures and fundamental patterns of thought would lead to a general theory of systems or structures. Piaget, though, treated TD as a higher stage in the epistemology of interdisciplinary relationships based on reciprocal assimilations capable of producing a “general” science. In contrast, Erich Jantsch imbued TD with a strong sense of social purpose. His model of a system of science, education, and innovation was based on generalized axiomatics introduced from the top level of purpose. Interdisciplinary linkages, such as biochemistry, were still needed. Yet, they were not enough (Apostel, Berger, Briggs, & Michaud, 1972).

Of the three definitions, Piaget’s and Jantsch’s became the most widely cited and served as rhetorical warrants for two of the three major discourses of TD: one highlighting epistemological transcendence and the other problem solving. In both cases critique of traditional notions of “objectivity” and “progress” also underscored the changing relationship of science and society, foreshadowing the growing discourse of transgression. Understanding divergences and overlaps in the first two discourses requires understanding their evolution since the ground-breaking seminar in 1970.

2. The discourse of transcendence

The epistemological problem at the heart of the discourse of transcendence is the idea of unity, traced in the West to ancient Greece. Philosophers did not agree on whether a single universal explanation was possible, and some principles and subject matters were ranked higher than others. Nonetheless, the goal of unity persisted in several ideas, including the medieval Christian *summa* and the Enlightenment ambition of universal reason. The Enlightenment project of the *Encyclopédie*, however, was just that: an assembly of what was known at a time when science was gaining privilege in the hierarchy of knowledge. Yet, the quest for unity continued in movements such as Transcendentalism, the Unity of Science attempt to integrate scientific statements into a common foundation, the search for unification theories in physics, and individual propositions such as Umberto Eco’s speculation on a perfect language and E. O. Wilson’s theory of consilience. The idea of unity was also linked with the concept of holism in biology, physics, social theory, systems theory, and philosophy.

The emergence of transdisciplinarity was not a complete departure from the historical quest for unity, but it signalled the need for new syntheses at a time of growing fragmentation of knowledge and culture. In a typology of forms of interdisciplinarity, Raymond Miller defined TD as “articulated conceptual frameworks” that transcend the narrow scope of disciplinary worldviews. Leading examples have included not only two approaches that loomed large in 1970 – general systems and structuralism – but also Marxism, phenomenology, policy sciences, and sociobiology. Holistic in intent, they proposed to reorganize the structure of knowledge by metaphorically encompassing parts of material fields that disciplines handle separately. Yet, Miller cautioned, all syntheses are not identical. Some aim to replace existing disciplinary approaches. Others are alternatives, and some are sources of coherence for working across disciplines. Proponents also claim differing types of isomorphism with the “real” world they purport to represent and greater or lesser receptivity to

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