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RECEIVED 03 June 2025

ACCEPTED 08 September 2025

PUBLISHED 19 September 2025

CITATION

Díaz-Barrera N and Lavanderos L (2025)
Beyond transdisciplinarity: Tridifferential
Relational Logic as an epistemic strategy for a
complex and sustainable university.
Front. Educ. 10:1640472.
doi: 10.3389/feduc.2025.1640472

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Beyond transdisciplinarity: Tridifferential Relational Logic as an epistemic strategy for a complex and sustainable university

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Transdisciplinarity (TD) arose as a language of complexity against disciplinary fragmentation; yet its institutional translation under quality-assurance regimes and “client” semantics has tended to commodify knowledge and produce cognitive alienation, thereby neutralizing its transformative force. This article does not seek to replace TD, but to re-read and safeguard it through Tridifferential Relational Logic (LRT)—a non-ontological relational logic that makes the observer explicit and analyzes the co-emergence of function, position, and meaning. In this register, knowledge is no longer treated as transferable content but as a situated symbolic distinction within complex relational fields, consistent with the view of life as a relational unit and eco-poiesis as the symbolic regeneration of relations. Consequently, university “sustainability” cannot be reduced to operational efficiency or indicator management; it must be understood as relational viability—the capacity to sustain tension, host difference, and produce meaning without premature closure. LRT operates as both a critical epistemology and a strategic instrument to imagine the university not as a functional system that optimizes offers in a market, but as an ecology of symbolic relations capable of resisting the supply–demand recoding documented in strategic planning and quality-assurance devices.

KEYWORDS

transdisciplinarity, Tridifferential Relational Logic, relational logic, epistemic strategy, complex university, sustainable university

1 Introduction

In the current transformation of the university, the erosion of disciplinary frameworks and the technocratic capture by logics of standardization, quality assurance, and profitability have produced a disconnection between the cognitive schemes that organize knowledge and the actual complexity of the phenomena to be addressed. In this context, transdisciplinarity (TD) remains indispensable as a language of complexity that interrupts binary logic and the ontology of the object; yet its partial institutionalization has often reduced it to curricular devices and short-range pedagogical “innovation,” neutralizing its transformative force through client semantics, rankings, and indicators [Nicolescu, 1996; Montuori, 2013; Lawrence, 2010; Díaz Barrera et al., 2020; Lavanderos (2022, 2025a,b)]. The problem is not TD but the epistemic and symbolic deficit of academic cloisters: when non-ontological relational conditions and explicit observer work are absent, what should open cognitive conflict is reconverted into an “offer” administered by supply–demand logics, with the commodification of knowledge and cognitive alienation already documented (Lavanderos, 2022, 2025a,b).

Hence it is not enough to defend TD; it is necessary to advance it by shielding it. Tridifferential Relational Logic (LRT) provides that shield by situating analysis not in static objects but in the inseparable co-emergence of function, position, and meaning, making the observer's distinctions explicit and denaturalizing administrative categories. This non-ontological reading reframes university sustainability as relational viability—the capacity to sustain tensions, host difference, and produce meaning without closure—rather than as operational efficiency, and it enables recognition of and resistance to managerial translations that recode TD as product. In continuity with life understood as a relational unit and with ecopoiesis as the symbolic regeneration of bonds (Lavanderos and Malpartida, 2024), LRT offers criteria and method for the university to inhabit complexity (Bateson, 1972; Latour, 2007), strengthening TD from within and preserving its paradigmatic power against neoliberal capture.

2 Current advances and tensions in transdisciplinarity

Transdisciplinarity emerged as a response to the epistemic crisis of modernity—marked by the fragmentation of knowledge, the split between theory and practice, and the dominance of a techno-scientific rationality that excluded affective, territorial, and symbolic dimensions. Authors such as Nicolescu (1996), Morin (2001), and Montuori (2013) underscored the urgency of articulating multiple levels of reality, academic and non-academic forms of knowing, and heterogeneous languages to confront contemporary complexity. In this sense, transdisciplinarity was not conceived as a mere integrative methodology but as an epistemic ethic oriented by dialogue, openness, and a non-ontological hospitality. This orientation is not questioned here; on the contrary, we share it and consider it indispensable. Our critical focus does not fall on TD itself, but on the institutional translations that have curtailed its transformative force.

Within the university, however, a paradox has unfolded: what in theory interrupts the modern organization of knowledge is, in practice, often neutralized and redirected into curricular formalism, simulated interdisciplinary collaborations, or pedagogical innovation protocols serving administrative and quality-assurance agendas (Lawrence, 2010). This pattern has been documented in diverse contexts. In Latin America, Díaz Barrera et al. (2020) offer a critical reflection on how, within university practice, transdisciplinarity is frequently reduced to standardized and procedural innovations. Montuori (2013) further observes that structural resistances often convert its theoretical potential into mere rhetorical integration. In Chile, Lavanderos (2022) demonstrates, through a qualitative content analysis of university documents, that strategic university planning privileges standardization, performance indicators, and 'client' semantics—conditions that recode transdisciplinarity as a manageable offer and shift its disruptive potential into a managerial instrument.

This drift exposes a structural tension which—read with Tridifferential Relational Logic (LRT)—shows how the co-emergence of function, position, and meaning slides into procedural organization, passive compliance, and an instrumental integration that thins epistemic depth and exhausts symbolic vitality. In its current configuration, TD thus risks being absorbed by the very logics it sought to challenge; without analytical tools to read relational-symbolic configurations, it tends to operate as methodological

formalism or rhetorical openness emptied of genuine cognitive engagement.

At this point of theoretical saturation, we argue for the need of an epistemic leap: not to replace TD, but to advance it by shielding it through a displacement of analysis to the relational-symbolic plane. It is not enough to integrate disciplines; it is necessary to read the symbolic conditions that render disciplinary distinctions possible, legitimate, and naturalized. This cannot be achieved through functional frameworks or isolated technical articulations; it requires a logic capable of sustaining conflict without closure, understanding knowledge as relational co-emergence. In this direction, we introduce LRT as a non-ontological framework that strengthens TD's epistemic project by working, in an integrated way, with the co-emergence of function-position-meaning and explicit observer work—dimensions habitually omitted in its institutional application (Lavanderos, 2025a,b; Lavanderos and Malpartida, 2024).

What distinguishes LRT is not a promise of greater efficiency or technical integration, but its analytical capacity to sustain unresolved symbolic tensions. This quality helps avoid premature closures and cultivate relational viability, a condition often neutralized in the institutionalization of TD. In this way, LRT protects and amplifies TD against its neoliberal recoding, keeping open the cognitive and symbolic tension that makes it possible to inhabit complexity without sacrificing epistemic depth.

3 Tridifferential Relational Logic: an epistemology of configurational reading

Inhabiting the complex university requires not only reform but an epistemic rupture—not with the disciplines themselves, but with the symbolic investments that have naturalized them within modernity's cognitive regimes. Transdisciplinarity marked a decisive shift, destabilizing the foundations of disciplinary autonomy and inviting epistemic pluralism. However, once formalized within institutional structures, it often became protocol: its tensions were converted into formats, its openness translated into managerial language. At that threshold—where complexity is absorbed by form and the disruptive gesture becomes administrative routine—another kind of epistemology becomes necessary. In this context we situate the emergence of Tridifferential Relational Logic (LRT). This framework does not seek to displace or invalidate transdisciplinarity, but to operate alongside it, offering tools to read and sustain the symbolic tensions that its institutionalization sometimes neutralizes. LRT is not a method nor a theory in the conventional sense. It is a non-ontological epistemology that assumes the domain in which we work is not made of discrete entities, but of configurations generated through relational distinctions. It holds that phenomena, practices, and institutions should not be read as fixed categories, but as configurations emerging from the interaction of three symbolic operators: function (what a discourse or practice does), position (from where it is enacted or enunciated), and meaning (what symbolic coherence emerges from that articulation). This threefold coherence does not describe a causal sequence, but a relational field within which symbolic tension shapes knowledge, action, and identity.

What distinguishes LRT from other relational approaches is that it does not aspire to map actors or systems, but to uncover the symbolic distinctions that sustain epistemic worlds. It does not stabilize

categories—it inhabits their instability. It recognizes that the university is not merely a structure containing knowledge, but a symbolic field where meaning is always contested and where every formation—pedagogical, institutional, or cognitive—is historically and relationally produced.

To read the university through LRT is to resist both functionalist simplifications and linear causality. It dismantles the assumption that theory must necessarily precede practice or that knowledge is simply transferred from one subject to another. Instead, it understands formation as co-emergent: unfolding within the tension between what is said, how it is positioned, and the meaning it generates.

This epistemic displacement has several implications. First, it reveals that to observe is always to intervene symbolically: every act of reading configures a world. Second, it shifts the locus of critique from content to the modes of symbolic distinction through which legitimacy is produced and exclusions are enacted. Third, it offers a way to analyze complexity without reducing it to synthesis.

A university understood through LRT is not an “efficient” institution; it is a space of symbolic negotiation where tensions are sustained rather than resolved. In this sense, sustainability is not “what works,” but what can be held symbolically open in conflict. Thus, LRT becomes more than an analytical tool: it is a strategy for reimagining the university as a living ecology of relation, distinction, and epistemic possibility.

Example: Strategic Planning Units in Higher Education Institutions.

Function: The primary function of these units is to translate institutional vision into quantifiable objectives. They coordinate performance indicators, oversee compliance with accreditation standards, and produce reports aimed at demonstrating institutional coherence and efficiency. Symbolically, they operate as devices of temporal projection and epistemic control.

Position: These units are typically located not within academic or deliberative bodies, but under the rector’s office, vice-rectorates, or external affairs. Their relationship to faculties, departments, and research groups is often unilateral. They do not emerge from academic dialogue; they are imposed as administrative rationalities, with limited symbolic exchange with teaching or research communities.

Meaning: The symbolic meaning that emerges is one of functional legitimacy without epistemic co-construction. In this configuration, the institution does not appear as a living ecology of contested knowledges, but as a technocratic entity that seeks sustainability through predictive management rather than symbolic viability. What is erased is the capacity for conflict, disagreement, and epistemic heterogeneity—the very elements that sustain complexity.

From the LRT perspective, this configuration is not simply a matter of managerial overreach: it reveals a symbolic economy of distinction in which relational meaning is subordinated to control. Rather than enabling the university to inhabit its contradictions, this structure performs a containment of symbolic tension.

Thus, the issue is not whether strategic planning “works,” but whether its symbolic function enables or disables the relational conditions through which a university sustains itself as a complex and co-emergent epistemic space.

4 Projections: toward a complex and sustainable university

Thinking the university as a complex system does not mean describing its functional multiplicity; it means recognizing that its sustainability is not rooted in efficiency but in its symbolic capacity to

hold tension (Morin, 2001; Barad, 2003). The task is not to accumulate reforms or adjust structures, but to interrogate the epistemic frameworks that constitute it, the logics that legitimize its practices, and the meanings that enable or suppress its possible worlds.

In this direction, Tridifferential Relational Logic (LRT) is not projected as a model of institutional management, but as an epistemic heuristic for reading the university as a symbolically dense field, full of tensions and open to instability as a productive condition. Transdisciplinarity (TD) remains indispensable, yet it must advance and be shielded against managerial recoding: the shift to the relational-symbolic plane proposed by LRT allows us to detect and resist the translation of TD’s disruptive gesture into formats, indicators, and “client” semantics (Lavanderos, 2022), as well as the commodification of knowledge and cognitive alienation characteristic of contemporary capitalism (Lavanderos, 2025a,b).

Sustainability as a relational domain (with *ecopoiesis*). In LRT’s terms, sustainability is not an operational attribute of structures or resources but the relational viability of a symbolic field that can sustain tension, host difference, and produce meaning without closure. Sustainability is not “managed”; it is co-constructed in the thickness of relations. This reading is grounded in *ecopoiesis*, understood as the process by which life—and, by analogy, institutional life—regenerates symbolically and relationally: life is a relational unit, not a sum of objects, and its continuity depends on the capacity to reconfigure bonds under changing conditions (Lavanderos and Malpartida, 2024). Hence, assessing sustainability by efficiency or by compliance with indicators is a category mistake: the pertinent measure is relational viability, namely the creative persistence of relations that keep fertile conflict open and avoid reducing complexity to supply-demand logics (Lavanderos, 2022, 2025a,b).

Read in this way, the university that assumes complexity does not merely discuss it: it inhabits it. It does not instrumentalize TD: it transcends it without replacing it, strengthening TD from within through explicit observer work and the co-emergent reading of function-position-meaning. It does not “integrate” knowledges as interchangeable pieces: it sustains their conflicts, accepts indeterminacy, and turns controversy into a source of learning. It does not represent the social as an external object: it inscribes itself in its tensions, recognizing that every act of reading configures a world.

This horizon requires concrete institutional transformations consistent with LRT: symbolic governance that does not subordinate epistemic deliberation to planning units; relational evaluation that privileges viability over efficiency and deflates indicator fetishism; situated curricula that work explicitly with the observer and with *ecopoiesis* as a practice of care and regeneration of bonds; transdisciplinary research that is shielded by relational criteria preventing its reduction to protocol. The point is less to create new KPIs than to denaturalize administrative ontology, reopen symbolic tension, and safeguard meaningful difference.

Thus, a sustainable university will not be the one that best “manages” crisis, but the one capable of holding discomfort as an epistemic principle, organizing its institutional forms around symbolically inhabitable modes of connection, and accepting that formation does not prepare for a given world—it produces worlds. The horizon, then, is not the technical overcoming of TD’s limits, but its displacement toward a radically relational logic that enables us to read the university field as a contested territory, where knowledge is neither data, nor result, nor product, but a situated distinction within an ecology of tensions we call the university (Orellana, 2014; van Dijk, 2005).

5 Practical applications of LRT in the university: between analysis, formation, and institutional practice

Tridifferential Relational Logic (LRT)—as an epistemic stance and a methodological device—does not merely propose a new way to interpret knowledge; it enables situated, strategically sustainable modes of intervention across university life. Its power lies less in generating additional “content” than in symbolically reorganizing practices, allowing us to surface emergent configurations of meaning where traditional disciplinary frameworks have operated through simplification, closure, or normativization.

5.1 In teaching: pedagogy of the link and symbolically inhabited formation

Applying LRT in the classroom is not the rollout of an instructional technique but the adoption of an epistemological posture. Teachers and students are configured as subjects-in-relation, whose roles and intelligibilities co-emerge within the pedagogical encounter rather than being pre-assigned as “transmitters” and “receivers.” The curriculum ceases to function as a linear sequence of topics and becomes a web of inhabitable distinctions, where knowledge is produced through co-presence, mutual care, and openness to indeterminacy. In this key, the pedagogy of the link (Díaz Barrera et al., 2020) is not an affective add-on but an epistemic practice: education is treated as relational world-making, and evaluation privileges relational viability over performance metrics. Read alongside *ecopoiesis* (Lavanderos and Malpartida, 2024), formation is understood as the symbolic regeneration of ties that sustain learning as a living field rather than a pipeline of competencies.

5.2 In research: configurational reading and analytical co-emergence

Methodologically, LRT advances a form of configurational analysis that is neither codifying nor taxonomic. Whether working with interviews, focus groups, narratives, or institutional documents, the aim is not to extract opinions but to read how symbolic tensions are configured through experience. Rather than imposing external categories, analysis proceeds by tracking the co-emergence of what an utterance or practice does, where it is enacted, and the sense it mobilizes—without reducing this triad to separate checkboxes. The result is a cartography of tensions and trajectories that can orient decisions in epistemically dense arenas such as teacher education, critical pedagogy, and organizational inquiry, while guarding against the drift toward managerial categories that flatten meaning.

5.3 In institutional practice: epistemic sustainability and relational governance

LRT also reframes how universities are organized and governed. If every policy produces symbolic distinctions (what counts as quality, research, or formation), applying LRT entails examining the performative effects of those distinctions and opening deliberation not around indicators but around configurations of meaning. A university guided by LRT does not seek stabilization as an end; it seeks to sustain

symbolic openness, recognizing that its endurance is not rooted in efficiency but in the capacity to host unresolved tensions and multiplicities. In this sense, sustainability shifts from technical administration to deep relational viability (Lavanderos, 2022, 2025a,b). Governance becomes relational: it denaturalizes indicator fetishism, cultivates spaces where conflict remains thinkable, and aligns strategic planning with *ecopoietic* practices of institutional care and regeneration rather than with supply–demand recoding.

In sum, LRT is more than a theoretical proposal: it is a practical strategy for reimagining the university through relation, conflict, and difference—strengthening transdisciplinarity from within by shielding its transformative impulse against managerial capture and by enabling practices that keep meaning, position, and function dynamically co-emergent in the everyday life of the institution.

6 Conclusion—radical opening of TD with LRT as methodological ally

Transdisciplinarity (TD) does not need a timid defense; it needs effective opening to produce the transformation it promises—one too often thwarted by linearity and reductive mediocrity. When confined to protocols or to “innovations” without depth, TD is deactivated; when allowed to inhabit complexity, it interrupts binary logic, overflows the ontology of the object, and reconfigures the symbolic field of knowledge (Montuori, 2013). Drawing on documentary evidence of commodification and administrative capture (Lavanderos, 2022) and on the critique of contemporary cognitive alienation (Lavanderos, 2025a,b), this essay contends that the obstacle is not TD itself but the regime that recodes it into format, indicator, and client.

Tridifferential Relational Logic (LRT) is the methodological ally TD requires to avoid translation into managerialism. It does not replace TD; it shields it. By operating without substantialist ontologies and reading knowledge as the relational co-emergence of practices, positions, and meanings, LRT keeps fertile conflict open—the very condition under which TD truly transforms. From this vantage, sustainability is not efficiency nor metric compliance; it is relational viability: an institution's capacity to sustain tensions, host difference, and produce meaning without closure (Lavanderos and Malpartida, 2024). Complexity is cared for, not summarized; bonds are regenerated (*ecopoiesis*), not reduced to catalogs.

To advance TD, then, is to install epistemic conditions that prevent its reduction: explicit observer work in teaching and research; relational evaluation rather than indicator fetishism; symbolic governance that places epistemic deliberation above instrumental planning; situated curricula that treat knowledge as a shared symbolic distinction, not as transferable content. None of this abandons TD; rather, it frames TD with LRT so that its disruptive gesture is not absorbed by technocratic inertia.

At a time when universities pursue legitimacy through metrics, we propose a different horizon: a complex university that is relationally sustainable; an institution that does not “manage” crisis but inhabits it; that does not “integrate” knowledges as interchangeable parts but sustains their conflicts; that does not represent the social from outside but inscribes itself in its tensions. LRT not only protects transdisciplinarity within the university; it also enables a strategic form of resistance against the regime that continuously seeks to recode it. Universities that assume this horizon may not be immune to accreditation and funding pressures, yet they gain the capacity to denaturalize imposed categories, to create alternative indicators of

relational viability, and to weave networks of shared legitimacy that weaken the regime's power to unilaterally enforce its metrics. In this sense, LRT does not replace TD; it strengthens and equips it to confront both internal institutional capture and the external mechanisms of control that aim to transform knowledge into a commodity, thus opening the possibility of a genuinely sustainable and complex university.

If TD does not unsettle, it does not transform. LRT does not compete with TD; it equips and fortifies it so that its paradigmatic power can cut through administration, overflow linearity, and resist reductive mediocrity. From here, producing knowledge is not the application of content; it is the co-inhabitation of possible worlds.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

ND-B: Writing – original draft, Writing – review & editing. LL: Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

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