Language Education and Beyond: A Concise History of Transdisciplinarity in Applied Linguistics

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Article Info

Abstract

Trans- has become both a core concept and a buzzword in Applied Linguistics. However, unlike recent terms such as translanguaging, transdisciplinarity has a fifty-year tradition. The article outlines the history of this research framework and its intrinsic relation to our field. In doing so, it explains the perfect match of transdisciplinary research and Applied Linguistics – especially if we understand Applied Linguistics in a broad sense, as "dealing with practical problems of language and communication that can be identified, analysed or solved by applying available theories, methods and results […] or by developing new theoretical and methodological frameworks" (www.aila.info, 2021-01-07).

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Introduction

The field of Applied Linguistics (AL) has always considered itself to be a field that bridges the theory and practice of language learning and use. In the last two decades, however, there has been a growing interest in so-called inter- and trans-perspectives on its object of study (e.g., Hawkins & Mori, 2018).

While the prefix *inter-*, as in *interlingual*, *intercultural, interdisciplinary* and *international*, tends to denote the movement between two distinct entities and their relations, the prefix *trans-,* as in *translingual*, *transcultural* and *transnational,* aims at transcending the entities themselves. This happens in the threefold Hegelian sense of conserving (*conservare*), elevating (*elevare*) and cancelling (*negare*) at the same time: entities originally separated from one another are, thus, replaced by a new, emergent whole. In the case of *transdisciplinarity* (TD), these entities are disciplines in academic and general professional environments.

What seems so self-evident at first glance turns out to be less straightforward on closer inspection, especially in relation to AL and its complex relationships to key concepts of transdisciplinarity such as *discipline*, *practice* and *problem*. This paper clarifies the notion of transdisciplinarity in AL on three levels: overcoming boundaries between disciplines (Part 1), domains (Part 2) and professions (Part 3). It concludes by summarising the twofold advantage TD offers to applied linguists, in our field and far beyond.

1 Overcoming disciplinary boundaries: Working together with scientists from other disciplines

Trans- has become a core concept (and buzzword) in AL. However, unlike recent concepts such as *translanguaging* (e.g., Li, 2017), transdisciplinarity has a fifty-year tradition. A brief review (for a more detailed historical overview see e.g. Bernstein, 2015) takes us in four macro movements from the early seventies to the early nineties (a, b), then to the beginning of the new millennium (c) and finally to recent developments (d). In the history of TD, it becomes apparent that early pioneering ideas were developed by several scientists in different regions of the world independently from each other.

a) In 1970, a conference was held at the University of Nice, co-sponsored by the Organisation for Economic Co-operation and Development (OECD) and the French Ministry of Education. This is where the term *transdisciplinary* in its present understanding first appeared. The Swiss psychologist Jean Piaget used it in discussions about the development of new educational programmes at universities. In the conference proceedings, he described TD as "a total system without any firm boundaries between disciplines" (Piaget, 1972, p. 138).

In the same conference proceedings, the Austrian astrophysicist Erich Jantsch defined TD as "the coordination of all disciplines […] on the basis of […] an emerging epistemological […] pattern" (Jantsch, 1972, p. 3). The term *emergent* is important here. From the beginning, TD was seen as a research framework in which existing bodies of knowledge are combined and coordinated to create new knowledge at higher levels. It is only through this emergent outcome that TD research can be expected to transcend disciplinary boundaries of understanding and contribute to solving real-world problems (Padurean & Cheveresan, 2010).

b) At almost the same time as the European researchers attended the OECD conference, but without knowing them, Jack Lee Mahan developed his concept of transdisciplinarity at the United States International University. In his dissertation *Toward transdisciplinary inquiry in the human sciences*, he describes TD similarly to Piaget and Jantsch, but emphasises the ethical orientation towards "life [...] and the human condition" (Mahan, 1970, p. 21). According to Mahan, TD has the potential to contribute significantly on the one hand to the early recognition and anticipation of impending social problems, and on the other hand, to the solution of such existing problems. According to Mahan, this makes TD stronger than disciplinary approaches, but, as he complains, TD still lacks scientific reputation and political backing.

c) It was the societal issues raised by Mahan that brought TD vigorously back onto the research agenda in the early 1990s. Fundamental environmental crises called for prudent action based on multi-perspective knowledge of the complexity and dynamics of life and the human condition. The ecologically motivated Earth Summit of the United Nations in Rio de Janeiro in 1992 was followed by the First World Congress on Transdisciplinarity in Portugal in 1994. It led to a TD manifesto, mainly attributed to and published by the Romanian physicist Basarab Nicolescu (Nicolescu, 1996; Nicolescu, 2002).

In the same year, a group of researchers in the social and political sciences around Michael Gibbons and Helga Nowotny published their book *The new production of knowledge*, in which they distinguish between two modes of knowledge generation and application (Gibbons, et al., 1994): While research in mode 1 is driven by academic and disciplinary interests, research in mode 2 is generated and applied jointly and cyclically by academics (as experts in scientific knowledge) and practitioners (as experts in practical knowledge about, e.g., government and industry) to solve real-world problems in an inclusive and socially responsible way.

An additional driver of the spread of TD in the social sciences was the International Transdisciplinarity Conference, held in 2000 and organized by the Swiss National Science Foundation in Zurich. The focus shifted from discussing TD as an ethically motivated theoretical framework to research practice within that framework. Earlier approaches had developed the theoretical underpinnings of combining knowledge logics to address real-world problems. So, the Zurich congress focused on practical issues of a) integrating practitioners and their expert knowledge into research teams, b) communicating and learning from each other across epistemological boundaries, and c) evaluating research within TD frameworks (e.g., Klein, et al., 2001).

d) Since 2010, the real problems that TD aims to solve have tended to be referred to as "wicked problems" (Brown, Harris, & Russell, 2010, based on Rittel & Webber, 1973). These wicked, intractable problems are complex and dynamic, meaning that they are densely interwoven with other problems and tend to persist because actions to solve them generate new problems. Solutions in such cases require creative, innovative ways of investigation, decision-making and implementation (Morales, 2017, 37; see also Larsen-Freeman, 2012). This is where the concept of sustainability comes in – wicked problems require sustainable solutions.

In contemporary TD research, sustainability is widely understood as a combination of social, ecological and economic developments in a way that ensures the long-term development of both humanity and the entire ecosystem. An exemplary catalogue, as ratified by the United Nations in 2015, includes, e.g., "no poverty", "zero hunger", "good health" and "quality education", but also "climate action" and "industry, innovation and infrastructure" (United Nations, 2015, p. 14). According to today's TD understanding, a sustainable solution aims at such overarching goals if it alleviates or even eliminates a concrete problem.

A more recent development in TD research concerns researchers as individuals. Only recently have the requirements arising from TD collaborations for individual researchers been discussed systematically. These demands include the individual competence to translate between the epistemologies and languages of the parties involved (Augsburg, 2014; Maguire, 2015; Morales, 2017; Warner, 2018). Furthermore, being a TD researcher requires values such as open-mindedness, tolerance and respect for other points of view (Stokols, 2014, p. 63), as well as a strong interest in understanding "the world" as well as "ourselves" (Montuori, 2010, p. 6).

Interim conclusion: TD was developed in the 1970s with the aim of being able to better solve socially significant problems across disciplines. While the first TD debates mainly addressed the natural sciences, since the 1990s the humanities and social sciences have been strongly involved. Research on the opportunities and risks of TD shows that TD projects are theoretically and practically complex; those involved must develop a common understanding across disciplinary boundaries – and even beyond the boundaries of academic research.

2. Overcoming domain boundaries: Including professional expertise on par

Crossing disciplinary boundaries, as explained above, has led to two main conceptions of TD in AL. Both conceptions of TD seek to transcend the notion of academic discipline. They do so in two different yet related ways. In the first understanding (TD_1), transdisciplinarity aims to overcome the concept of discipline *within academia* as the sole principle for organising and controlling academic knowledge. As a result, TD_1 argues for deep collaboration across academic disciplines and fields.

In a second understanding (TD_2), transdisciplinarity aims to transgress academia *in general* as the exclusive source of legitimate knowledge. As a result, TD_2 argues for deep collaboration across academic and non-academic disciplines and fields. In doing so, TD_2 is "research on, for, and with" practitioners (Cameron, Frazer, Rampton & Richardson, 1992, p. 22). TD_2 research sees, for example, teachers or policy makers not only as the focus of research interests, but also as participants on par with the academic researchers. They are considered experts of their professional practice knowledge, which functions differently from academic knowledge but can contribute equally to problem solving.

TD_2 research thus goes beyond the academic discipline and domain as the only source of legitimate knowledge. It incorporates non-academic expert knowledge from the workplace and everyday life as different but fundamentally equivalent (for overviews and critical discussions see Bernstein, 2015; Pohl & Hirsch Hadorn, 2007; Perrin, 2012; Stokols, 2014). In doing so, TD_2 draws on theories of knowledge from a) action research, b) research on professional education and organisational development, c) ethnography and anthropology, and d) dynamic systems theory.

a) **Action research**: Early action researchers aimed, for example, to improve relations between whites and Native Americans (Collier, 1945; see also Neilsen, 2006) or to reduce food consumption during the Second World War (Lewin, 1946). Both protagonists argued that change needs the committed participation of those concerned. Since then, action research has evolved into a "democratic process" (Reason & Bradbury, 2006, p. 1), enacted as "collaborative learning [of academics] with stakeholders [from outside academia]" (Christinck & Kaufmann, 2018, p. 171). This learning from each other eventually leads to innovative and applicable solutions to complex practical problems.

In a contemporary overview of qualitative research in AL, action research is defined as a "superordinate term for a set of approaches to research which, at the same time, systematically investigate a given social situation and promote democratic change and collaborative participation" (Burns, 2016, p. 187). This is similar to the definition of TD_2. Action researchers are considered "change agents […] interested in resolving, reformulating or refining dilemmas, predicaments or puzzles in their daily lives through systematic planning, data-gathering, reflection and further informed action" (p. 188). These change agents approach their goal by being "simultaneously critical participants in the action and researchers of the action" (p. 189).

b) **Educational and organisational research**: Of course, TD_2 and action research only make sense if the individuals and organisations involved are interested in critically reflecting on their own practice – if they are "reflective practitioners", characterised by "reflection in action" (Schön, 1983, p. 21). Reflective practice, be it in psychotherapy, urban development or managing, "is about more than observing what you have done and trying to do it better next time. It encourages re-thinking professional values and goals by subjecting them to critical scrutiny and by developing new processes for doing so" (Jones & Stubbe, 2004, p. 194, based on Argyris & Schön, 1974).

In their report on major research projects on organisational communication in New Zealand, Debora Jones and Maria Stubbe challenge AL researchers to think about how workplace data analysis can be made useful to practitioners (Jones & Stubbe, 2004 186). The authors point out that action learning works in cycles, often beginning with a question. This question is followed by structured observation and reflection, both by academic researchers and practitioners. The intermediate outcome is an action plan as a starting point for another cycle of structured (self-) observation and reflection (p. 199).

c) **Ethnography and cultural anthropology**: TD_2 as a joint action based on reflective practice and mutual learning requires both academic researchers and practitioners involved in a project to be able and willing to take emic and etic perspectives. In an emic perspective, for example, academic researchers need to be interested in – and able to understand – the meaning-making practices of practitioner insiders. In an etic perspective, they are expected to translate between the (different) knowledge bases and language varieties of the practitioners and academic researchers involved. This brings knowledge generation in TD_2 close to ethnography and cultural anthropology.

Of course, adopting emic perspectives contradicts the positivist ideal of the distanced relationship between the supposedly objective researcher and the individuals or populations under investigation (Bernstein, 2015, p. 12). TD thus requires an understanding of science beyond the positivist paradigm. In her history of TD, the cultural anthropologist Jay Hillel Bernstein assumes that "the provocations" by Jürgen Habermas, Hans-Georg Gadamer and Charles Taylor were more influential for the development of TD_2 than "Nicolescu's abstruse theoretical framework" (Bernstein, 2015, p. 9 and p. 12, citing discussions in Rabinow & Sullivan, 1987 and Richardson & Fowers, 1998).

d) **Theory of complex dynamical systems**: The main reason for incorporating expertise and knowledge from as wide a range of fields and perspectives as possible is the complexity of intractable real-world problems (see Part 1d). Since existing knowledge about facets of such problems is "socially distributed" (Gibbons, et al., 1994, p.

34), integrative new knowledge can only be generated by discovering hidden connections between different disciplines and their bodies of knowledge (Madni, 2007, p. 3). This happens in "multi-stakeholder" discourses (Scholz & Steiner, 2015a; Scholz & Steiner, 2015b). The discourses foster both the complex analysis of the problems and knowledge sharing. "It is in using this multidimensional complexity to analyse problems and communicate and teach lessons about them that the novel contribution of transdisciplinarity lies" (Bernstein, 2015, p. 22).

Put simply, complex problems are investigated and solved using complexity procedures. These procedures foster the emergence of categorically new theoretical insights and practical solutions that are more than the sum of their (disciplinary) parts. *Emergence* is one of the fundamental concepts of complexity theory (e.g., Cilliers, 1998; Larsen-Freeman & Cameron, 2008; and Larsen-Freeman, 2012). Fundamental new system properties in the form of practical solutions emerge "at the edge of order and chaos" (Waldorp, 1992, p. 1), within TD teams attempting to connect seemingly incommensurable bodies of knowledge (Leavy, 2011, p. 31).

Taken together, action research, research on professional education and organisational development, ethnography and anthropology as well as complexity theory have laid the theoretical foundations for practitioners to collaborate with academics in transdisciplinary research teams. This theoretical background is, at least implicitly, taken into account in recent TD_2 approaches in AL. However, concerns are expressed in AL about opening up professional practice beyond the profession of teaching. This again has historical reasons, as the next section shows.

3   Overcoming boundaries between professions: Working with teachers and other practitioners

Doing TD_2, raises the issue of how to define *practitioner*. Academics can undoubtedly be considered practitioners with professional expertise too – they are experts in academic practices. Moreover, practitioners outside academia need not be different from academic practitioners in every respect. For example, there are similarities between the professions of academic researcher and banker: both engage in practices such as conducting research, negotiating funding and planning careers, to name a few. The distinction becomes even more complicated in one of AL's preferred fields of research, education and teaching.

On the one hand, both academic researchers and teachers are ultimately committed to increasing and disseminating available knowledge for society at large. Both groups tend to represent values beyond economic growth. And both groups have long been professionally socialised and organised along the lines of traditional academic disciplines. On the other hand, there are aspects in which teachers are distinctly different from academic researchers but similar to professionals in fields such as banking. In both education and banking, for example, experts tend to process knowledge in pragmatic, not necessarily academic ways, and the focus of their work is on practical issues.

However, researchers in AL see a categorical difference between working with teachers and working with representatives from administration and business (Douglas Fir Group, 2016, p. 38). Why this? – The next paragraphs first explain and illustrate TD_2 collaboration between researchers and teachers (a). Then the scope is broadened to include practitioners from all conceivable professions, including those further removed from academic values (b). This broader framework challenges ideologies developed in a context primarily focused on research and teaching (c).

a)   Language teaching was the practical field with which AL was first concerned. AL, whether considered as a discipline or merely as a field of research, originally defined itself by the close relationship of research to language-teaching practice. When Pit Corder wrote his seminal monograph *Introducing Applied Linguistics*, he was concerned with "the contributions that the discoveries and methods of those who study language scientifically [...] can make to the solution of some of the problems which arise in the course of planning, organising and carrying out a [foreign-] language-teaching programme" (Corder, 1973, blurb). In early AL, "educational linguist[s]" (Van Lier, 1997, p. 95) examined the practices of language teaching.

Thus, many applied linguists have long limited their subject to the study and practice of teaching English, or even only British or American English. Even today, both the Chinese and Japanese national member organisations of the World Association of Applied Linguistics AILA focus explicitly on the teaching of English. This is also reflected in the names of their organisations: *CELEA* stands for *China English Language Education Association* and *JACET* for *Japan Association of College English Teachers*. Despite their names, both CELEA

and JACET have recently become more open to a broader understanding of AL, which justifies their inclusion as AILA member organisations.

b) Indeed, AL has been understood by AILA for two decades as including language teaching, but being much broader and more inclusive. AL, in this broad understanding, addresses all problems of language use in and between communities and societies (see https://aila.info). In line with the theme of the British Association of Applied Linguistics (BAAL) Congress 2018, such an understanding of the field means "taking risks in applied linguistics" (http://www.baal2018.org.uk). This idea is precisely what applied linguist and ethnographer Celia Roberts had in mind over two decades ago when she strongly suggested that the discipline open its focus beyond language learning in the narrow sense to include other "strategic research sites" (Roberts, 1997, p. 74).

The term *strategic* is a key concept here, because "by extending the research community to include the professionals with whom we work, we can reconstitute applied linguistics in new and as yet unchartered ways" (p. 75; see also Antos, 2003, p. 486). Together with Chris Candlin, Srikant Sarangi and many other colleagues from the field, she has been practising TD_2 in AL since the late 1990s. This has led to institutions such as the Applied Linguistics and Professional Practice (ALAPP) conference series and network, and a book series on *Communicating in Professions and Organisations* (e.g., Woydack, 2019).

In this series of books, language teaching is one of the many practical areas of AL. Indeed, it could be argued that all practitioners outside academia, be they teachers, nurses or managers, share the tendency to rely on practical, often tacit, expert knowledge – on "tacit knowledge" generated in the minds of the very people who are a step ahead of their organisations and professions (Gibbons, et al., 1994, p. 24; see also Polanyi, 1966). Only science ideally always generates and shares its knowledge in explicit, transparent and systematic procedures. In such a view, there is no reason to consider teachers as categorically different from other practitioners outside academia.

c) But what about the risks that arise when, for example, representatives of strongly market-oriented professional fields participate in projects on an equal footing with academic researchers? What dilemmas around economic and political power come into play? – It has been argued on solid empirical grounds that power play takes place in all professions, including academia and pedagogy (e.g., Ehrich, Kimber, Millwater, & Cranston, 2011; Hess & McAvoy, 2015). Teachers, for example, have to deal in their professional lives with challenging stakeholders, such as parents, who exercise power through increasingly organised groups and cause significant ethical dilemmas (e.g., Ellis, 2012).

This insight suggests that the categorical division between academic and non-academic professional practices must be rethought. For example, looking at the principles and procedures of data collection, analysis and presentation, it can be difficult to see clear and fundamental differences between social studies and data journalism (e.g., Strauss, 2016). Instead of two clearly distinguishable Aristotelian categories of subjects, such as academic/non-academic or school/extracurricular, the practices investigated could be seen as prototypical centres in a multidimensional landscape in which concrete projects are located. In such a view, TD_1, which includes only academic practitioners and practices, can be seen as a specific case of TD_2, which includes practitioners and practices in general.

This third section questioned the often-undisputed distinction of two types of practice that TD_2 includes in research projects: Educational and other professional practice. What is of immediate concern to many AL colleagues is that AL academics, when working with a wider range of practitioners, risk having to confront issues of power and ethics. However, as it turns out, such issues are not confined to areas outside academia and teaching. Applied linguists who want to grapple with the complexity of real-world problems must face these questions, both in the fields they study and in their daily academic practice.

Conclusion: Transdisciplinarity as applied linguistics

In summary, TD is a historically rich research framework anchored in knowledge theory as discussed by its pioneers in the early 1970s (Part 1). Its core idea is to break down traditional boundaries between disciplines and domains in order to bring together knowledge in a participatory discourse that enables innovative, emergent and sustainable solutions to socially relevant problems (Part 2). In its more recent variant, TD_2, transdisciplinary

research also involves non-academic experts in the research projects from the very beginning. In the case of AL, these practitioners can be teachers, but also other language users who are considered experts in their field (Part 3).

More recently, the *trans-* trend in AL has sparked interest in TD in circles that are not always aware of the long explicit history of TD outside AL – and the almost equally long implicit history of TD within AL. As a result, transdisciplinarity was sometimes understood as just another offshoot of a fashionable development that began with translanguaging and consists of somehow connecting everything to everything. Understandably, such a notion of trans-disciplinarity immediately raised the question of whether AL was a discipline at all. After all, that would be the condition for being able to connect with other disciplines.

In a historically more thorough view of TD, however, this question, which is academically vibrant but pragmatically irrelevant to research, becomes superfluous. It is about epistemes, perspectives, deliberation, emergence – about sustainable solutions to significant problems, in the interest of theorists, practitioners and society at large. In addition, it is important to realise that AL has always been concerned with what TD stands for. AL brings a wealth of experience in linking practice and theory, albeit, experience that, for a long time, was limited to the classroom of language teaching.

AL also has the knowledge of how to translate between languages and cultures. Given the multitude of disciplinary and cultural backgrounds of academics and other professionals collaborating in a project, such translation is central to the success of a transdisciplinary research. The collaboration across boundaries is not about complete theoretical fit, but about "epistemic assemblage" (Pennycook, 2018, p. 113) and emergent knowledge gain in the sense of the pressing question to be solved. This means accepting points of theoretical incompatibility for now. They may be annoying in theory; in research practice they are the "holes through which the world shines through to us" (Van Lier, 1997, p. 102, based on Natsoulas, 1990).

Seeing holes, of course, does not yet mean seeing the light. To become drivers of theoretical development and sustainable solutions to wicked, intractable problems, epistemological incompatibilities must be recognised, discussed and overcome with emergent, categorically new approaches. This requires creativity – and mediating discourse: the core contribution of transdisciplinary research is to create relationships between actors and arenas in which they can meet in dialogue (Gustavsen, 2006, p. 17). And discourse and dialogue in TD mean the use of language to develop shared concepts (Colpaert, 2018, p. 3).

Without this discourse and dialogue, without this theory- and practice-based co-creation, without this joint reflection and mutual appropriation of new concepts by theory and practice, TD would have to fail at the boundaries of disciplines and domains – shatter at their different levels of reality (Widdowson, 2005; 2006, p. 96). This is precisely why "multi-stakeholder discourses" (Padmanabhan, 2018), which require "a kind of multilingualism" (Wertsch, Del Rio, & Alvarez, 1995), are key. TD is only possible when all project participants are able to understand each other and make themselves understood in such a multilingual environment.

TD is therefore about developing, learning and using common languages. This means that AL scholars in TD teams bring their professional perspectives on how language works in society and how science and practice (of language teaching) can work together coherently and successfully. But there is more. Applied linguists are also needed for their expertise in facilitating the multilingual communication of project participants from diverse subject cultures that is indispensable for mutual learning. Put simply, transdisciplinary research is – to a considerable extent – applied linguistics in action.

For this reason, the growth of TD in research practice over the last decade is doubly good news for applied linguists. First, it is hard to imagine any pressing real-world problems – from global warming to pandemics – wherein language use is not a crucial component (cf. Myers, 2005, p. 527). And secondly, discourse across disciplinary boundaries needs precisely the reflective language use that AL has been studying and promoting for decades.

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