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INTERDISCIPLINARITY IN LATIN AMERICA: BUILDING DIALOGUE THROUGH REGIONALISM

INTRODUCTION

by

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About This Special Section

Although there is a large literature on interdisciplinarity from multiple perspectives and national experiences, understanding of interdisciplinary knowledge production is lacking in Latin America. This collection of articles from across that continent is a beginning step toward creating understanding of related themes and reflections, with the aim of promoting a more interdisciplinary practice within Latin America. My main aim as editor is to counter the argument that communication among those representing different disciplines acting in different countries is impossible because of its complexity. The current variety of definitions and conceptualizations influences concrete actions in national contexts. However, communication is possible, and reflection on practice can be a pivotal process for positioning interdisciplinarity, leveraging programming in local cultural contexts as a foundation for both international and intercontinental dialogues. The goals of this Special Section of *Issues in Interdisciplinary Studies* are:

1. to present the main features of interdisciplinary (ID) and transdisciplinary (TD) work in Latin America to researchers and teachers in the rest of the world;

2. to promote dialogue among researchers and teachers from different countries and cultures dealing with related challenges and opportunities; and
3. to build common ground among researchers and teachers while initiating network activities across academic communities.

This collection appears at a time of renewed interest in interdisciplinarity in some countries and universities in Latin America, evidenced by recent discussion of research methods and dissemination of results that critically engaged theory and practice (Vienni, 2016). Because assembling case studies from separate countries is a first step, this Special Section does not compare their experiences. It identifies lessons learned in each country so as to inform future comparison of both the differences and similarities of the types of interdisciplinary work being done in Latin America. The Section does not aspire to unity or completeness. Yet, the selected case studies document Latin America's history of interdisciplinary experience. In the future, additional contributions can extend understanding not only across countries but also across topics, including transdisciplinary experiences and outreach activities (Hirsch Hadorn et al., 2008; Pohl & Hirsch Hadorn, 2008). In the case of transdisciplinarity, the concept has become a primary focus of scholarship in Europe, but the term is not widely used in Latin America, despite parallel efforts in problem-oriented research and the overarching paradigm of sustainability.

This collection also recognizes diversity in the current development of ID research and teaching in Latin America in two spheres: 1) primary areas of interest in authors' case studies, and 2) approaches to integration and applications within a particular country. To illustrate the diversity of areas of interdisciplinary work, the case studies represented here focus on development, in the article by Rodrigo Arocena and Judith Sutz (Universidad de la República, Uruguay); on international and interdisciplinary networks in climate services, in the article by Cecilia Hidalgo (Universidad de Buenos Aires, Argentina); on sustainability in postgraduate programs in Brazil, in the article by Marcel Bursztyn, María Beatriz Maury, and Gabriela Litre (Universidade de Brasília, Brazil); and on the institutional structure of an ID program, in the article by Juan Carlos Villa-Soto and Norma Blazquez (Universidad Nacional Autónoma de México, México).¹

This collection is also a foundation for an emerging field of "Studies in

¹ Note that here in the introduction to the Special Section and in the material on the title pages of the articles in the Section, we have named the authors' institutions in their appropriate languages. In the articles themselves, we have followed the authors' leads, in most cases anglicizing the names of the institutions mentioned.

Inter- and Trans-disciplinarity” (ESIT for its acronym in Spanish of Estudios Sobre Interdisciplina and Transdisciplina). The concept of regionalism that anchors this initiative aimed at building dialogue and systematizing lessons, explained further below, does not supplant other proposals (see for example Darbellay, 2015, in which the author named Interdisciplinary Studies as a field of study). Instead, it highlights questions currently being posed to Latin American researchers and teachers (Vienni, 2016) in different academic contexts. Some of these questions were addressed to the authors in this Section as a basis for their contributions:

- What are the main features of ID and TD research and teaching in Latin America?
- What lessons can be systematized from experiences in Latin American universities and academic contexts?
- Which national policies encourage or discourage ID and TD research across Latin America, with respect to both cross-cutting and locally-situated imperatives?
- What impact does ID and TD research have on cultural processes in Latin America?
- What traditions shape interdisciplinary teaching in undergraduate and postgraduate programs?
- How can learning processes for inter- and trans-disciplinary training be constructed in ways that are appropriate to local and hemisphere contexts?

To reiterate, this collection is incomplete, but together with material from others it can help to build the basis for wider dialogue. It can support individuals in expanding their thinking and writing to be inclusive of international perspectives. One of the principal claims this Special Section makes is that communication across continents is crucial for making generalizations about interdisciplinary theory and practice. Latin American scholars have been working and reflecting on interdisciplinary research and education in some cases for almost fifty years. Villa-Soto and Blazquez’s case study traces the relevant history in Mexico to the creation of the first interdisciplinary education programs in the 70s and the foundation of the Center for Interdisciplinary Research in the Sciences and Humanities in 1986 at the Universidad Nacional Autónoma de México. The Center furnishes a reference point for examining objectives and instruments of academic policy in Mexico, in order to understand methods of evaluation. Their case study covers not only modes of scientific interdisciplinarity, but also the main theoretical and epistemological focuses in university environments. Yet, these contributions are missing or minimized in North American and

European scholarship, reaffirming the role that the featured material in this Special Section can play in expanding scholarly understanding.

The Importance of Definitions

Any attempt at discussing interdisciplinarity requires precise definition. Andrew Barry and Georgina Born frame the task from the standpoint of widening belief that interdisciplinarity is not peripheral but essential to knowledge production and problem solving in the 21st century:

If the appearance of what is now called interdisciplinarity is a historical constant, then what is novel is the contemporary sense that greater interdisciplinarity is a necessary response to intensifying demands that research should become more integrated than before with society and the economy. Interdisciplinarity has come to be at once a governmental demand, a reflexive orientation within the academy, and an object of knowledge. (Barry & Born, 2004, in Barry & Born, 2013, p. 4)

Not everything, however, constitutes an interdisciplinary practice (Caetano, 2015). Barry and Born (2013, p.10) question the best way to address differences as well as mutating practices and models, while at the same time acknowledging they add substance to interdisciplinarity. Wolfgang Krohn, in turn, argues that even with different meanings many accounts of inter- and trans-disciplinarity have in common a belief they constitute “a privileged means for the solution of complex ‘real-world problems’” (Krohn, 2010, pp. 31–2). Others confirm this widely held view (Baerwald, 2010, p. 495; Klein, 2004, p. 523; Klein, 2010, p. 26; National Academy of Sciences, 2005). Nonetheless, two ways of conceptualizing problems need to be distinguished (Maniglier, 2012). One views problems negatively, as obstacles to overcome or as challenges to manage or resolve. This approach is the customary stance of many writers. In contrast, a positive conception of problems directs attention to the way that the problematization of certain situations may demand and generate novel responses (Foucault, 1994, p. 118; Maniglier, 1997, 2012; Laurent, 2011; Barry, 2012).

The last position, which Barry and Born (2013) emphasize, is a strong imperative for Latin America. “Interdisciplinarity,” “interdisciplines,” “interdisciplinary,” and other terms have been under discussion for nearly a half century, in multiple ways reported in this section. Barry and Born (2013, p.10) add that “one of the major questions raised in contemporary debates is whether promotion of interdisciplinarity is better understood as a response

to given problems or as a means of generating questions around which new forms of thought and experimental practice can coalesce.” New ways of thinking and new practices can guide resolution of problems including challenges of development in Latin America (Sen, 1999). The complexity and multidimensionality of development require both interdisciplinary and intercultural perspectives (García Canclini, 2004), not a universal model. Although often criticized as involving a narrow economic formula, development can improve the quality of material and spiritual life when people are seen as agents rather than clients or patients (Arocena & Sutz, 2003). Arocena and Sutz add that this view means individual lives become less lonely, “linking a normative view with a collective one and a proactive response.” Solo efforts are inefficient and even counterproductive. The field of Development Studies casts light on fruitful interactions that can guide proposals that also reduce loneliness (2015, p. 2).

The Second University Reform carried out by the Universidad de la República (UdelaR, Uruguay) in the period 2006-2014 is a case in point. This Reform facilitated construction of a Developmental University and creation of the Espacio Interdisciplinario (IE) (Arocena, 2008). In this context, program development was linked with the explicit goal of interdisciplinary work. In their case study for this Special Section, Arocena and Sutz show that new ways of thinking about development combine normative, factual, prospective, and propositional approaches in a truly interdisciplinary approach that takes stock of all relevant branches of knowledge. Such a conception of development and of Development Studies also highlights insights of Latin American thinking about Science, Technology, and Development, and the search for Inclusive Innovation Systems. Arocena and Sutz’s analysis of institutional building, teaching, and research at the Universidad de la República of Uruguay includes the role of the Research Council of UdelaR, purposes and tasks of the Unit of Science and Development of the Faculty of Sciences, the University’s Development Network, a new Bachelor degree in Development, and creation of the Espacio Interdisciplinario of UdelaR as a chapter of the Reform project shaped by the notion of a Developmental University.

Marcel Bursztyn, María Beatriz Maury, and Gabriela Litre’s case study adopts a different theoretical framework, illustrated by Sustainability Science in Brazil. The field arose in that country in response to a series of social demands often heard in other calls for interdisciplinarity. Bursztyn et al. show how different postgraduate teaching programs address these problems so as to better train future professionals using interdisciplinarity as the main approach to find sustainable solutions.

Cecilia Hidalgo's contribution to the Special Section describes a network attempt to build dialogues among inter-institutional and international organizations. Interdisciplinarity and knowledge networking are at the core of current global, regional, and national initiatives concerning climate. Both scientific knowledge and public participation are essential to enhancing the capacity of different sectors and governments to respond to challenges posed by climate variability and change. Hidalgo presents initial results of ongoing research in a recently launched Regional Climate Center for Southern South America (RCC-SSA) that is distinguished by close partnership and continuous interaction. The network approach to building common understanding across different types of knowledge also echoes in the concept of "regionalism."

Regionalism Beyond Geographies

"Peripheral condition" is a state of underdevelopment that implies little knowledge content with external subordination. Low demand for knowledge in underdevelopment makes even a weak supply of knowledge suboptimal, limiting the capacities of specialization in interdisciplinary work (Arocena & Sutz, 2003). Furthermore, interdisciplinary practices require time and resources (Lyall et al., 2015), including investment at the institutional level. However, given that interdisciplinary work involves institutional, cultural, political, and educational changes, a crucial question arises: How can it be linked with the aim of resolving the problems of underdevelopment? In a recent publication, Chou and Ravinet (2015) proposed the concept of "regionalism" as a framework in which a national or supranational state authority defines and elaborates a framework that could extend to the higher education policy sector (2015, p. 368). The Bologna Process in Europe and the MERCOSUR Education Program in Latin America exemplify this approach.

In the case of Bologna, the conception of regionalism in higher education was informed by political science literature and education studies. The Bologna Process is a collective effort of public authorities, universities, teachers, and students, together with stakeholder associations, employers, quality assurance agencies, and international organizations and institutions, including the European Commission. The main focuses are i) the introduction of the three cycle system (bachelor/master/doctorate); ii) strengthened quality assurance; and iii) easier recognition of qualifications and periods of study. In May 2015, the Education Ministers identified four

key priorities for the future: enhancing the quality and relevance of learning and teaching; fostering the employability of graduates throughout their working lives; making these systems more inclusive; and implementing agreed upon structural reforms (European Commission, 2016). The impact, Chou and Ravinet report, took the form of recomposing space, scale, and power in the higher education system. Three lessons emerged from Chou and Ravinet's analysis of different educational programs, such as MERCOSUR or Bologna:

- *It must be comparative.* Studying higher education regionalism means comparing varieties of higher education to consider a particular sector's prior isomorphism with other social sectors;
- *It must be sector-based.* Studying regionalism takes the particular dynamics of higher education seriously, including how they interact with wider multi-purpose regional organizations (EU, ASEAN, AU, etc.) as well as individual national needs; and
- *It must be differentiated.* Studying higher education regionalism entails a distinction between intra-regional initiatives (within one geographical region) and inter-regional initiatives (between at least two geographical regions).

Taking the three lessons as a point of departure, Chou and Ravinet then proposed a heuristic framework to study higher education regionalism along three dimensions:

1. *Constellation of actors* central and active in these processes: i.e., identifying the individual and collective actors involved and mapping their interaction patterns;
2. *Institutional arrangements* adopted, abandoned, and debated: i.e., identifying institutional forms and rules as well as the instruments considered and accepted; and
3. *Ideas and principles* embedded and operationalized: i.e., identifying paradigms, policy, and programmatic ideas guiding the different experiences of regionalism.

With this conceptual framework in mind, does interdisciplinarity have the potential to be an emerging regionalism in Latin America? While some individual countries do not have public policies that explicitly mention interdisciplinary research, let alone regard it as a central element, others such as Uruguay and Argentina identify examples in public policies and call for an interdisciplinary approach to cope with multidimensional problems. Conceived as a policy, interdisciplinarity embodies three elements of Chou and Ravinet's framework (2015):

- a. It involves a certain level of national authority, as in Latin

American universities, for instance. Here I take into account in a general way Latin American universities that are run by a centralized body overseeing higher education but also those individual universities that have some degree of autonomy;

- b. It designates a geographic region, which might include all Latin American countries including those in the Caribbean; and
- c. It refers to an educational policy in higher education, such as that represented in the Interdisciplinary Center (CEIICH) at the Universidad Nacional Autónoma de México.

Conceived further as a contribution to the problem of development, interdisciplinary knowledge production could be a linking concept for the Latin American “region” in response to the three dimensions Chou and Ravinet outlined, reported above (2015). In the first, the constellation of actors involved in interaction patterns is centralized in three missions of Latin American universities (research, teaching, and extension). This dimension is also related to an incipient development with regard to public policy. ID practices suffer in public policy, but some examples in the Uruguayan case study document a changing atmosphere. The international network Hidalgo describes also has among its aims the intention of changing current practices concerning climate services and the use of relevant knowledge in Argentina, accompanied by developing interdisciplinary areas such as analysis of their practices.

The second dimension Chou and Ravinet (2015) addressed is adoption, abandonment, or acceptance of institutional arrangements in higher education. This stipulation also applies in ID contexts. Three case studies in this Special Section reflect on this particular dimension, specifically, the ones from the Universidad de la República (Arocena & Sutz), the Universidade de Brasília (Bursztyn, Maury, & Litre), and the Universidad Nacional Autónoma de México (Villa-Soto & Blazquez). The three examples differ in the way interdisciplinarity was institutionalized but, at the same time, similarities appear across its instantiation in these institutions, shaped by a shared history concerning the role of the university in society and new ID and TD developments.

Lastly, the third dimension includes ideas and principles put into operation and overlapping policy and programmatic lines. Filippa Ribeiro (2016) observes that taken together the three dimensions constitute a new way of thinking about interdisciplinarity, one that reinforces a third form of transaction in higher education: social sharing and exchange. Generally speaking, production and exchange of knowledge are not factored into institutional design. That gap, Ribeiro adds, may be the reason “social

knowledge creation and interdisciplinarity have been shunted to the peripheries of academic organization landscape,” as the four articles of this Special Section show.

Given the gap exposed by the third dimension, the concept of a “network of practice” (Brown & Duguid, 2000) is a potential linchpin for regionalism across different Latin American institutions (Vienni, 2016). Networks of practice are large social systems through which researchers share information. In the current academic structure, the value of knowledge production is assessed more in terms of traditional proxy measures such as publications in academic venues. Networks of practice and exchange, however, may produce other equally important outcomes, including public policy initiatives, alternative publications, and long-term product development (Rothen, 2004). This type of work has been implemented and assessed by a novel network of universities, including the Universidad de Valparaíso in Chile, the Universidad de la República in Uruguay, the Universidad Nacional Autónoma de México, and the Universidad Autónoma de Querétaro also in Mexico. The network aims to develop new synergies and activities with a special focus on ID research, teaching, and practice (Vienni, 2016). The participating universities have signed a formal partnership agreement, but the network is open to other institutions in Latin America. This initiative is named “Latin-American Network on Interdisciplinary Studies” (Red Latinoamericana de Estudios Interdisciplinarios) due to its close linkage to the field of “Studies of Inter- and Trans-disciplinarity” (ESIT).

Studies of Inter- and Trans-disciplinarity: Building Regionalism in Latin America

As Sheila Jasanoff (2004) has suggested, what we know about the world is closely linked to our sense of what we can do, as well as the legitimacy given to particular actors, instruments, and actions. Science, Technology, and Society Studies is a model of analyzing systematically knowledge practices and expressions of power that operate as political agents. Likewise, an emerging field named “Studies of Inter- and Trans-disciplinarity” can be a framework for systematic analysis of experiences such as the ones described in this Special Section. Research practices and processes as well as perceptions of researchers and relationships within groups and institutions can be revealed and compared. The main objective is to create a theoretical and methodological framework for analyzing interdisciplinarity and transdisciplinarity in the Latin American context, while also analyzing

ID and TD aspects of scientific development and related transformations in various areas (Vienni, 2016). The relevance of this new field lies in theoretical contributions built from comprehensive analysis of practices and awareness of the increasing complexity of scientific knowledge (Frodeman, 2014a, 2014b; Frodeman, Klein, & Mitcham, 2010).

The overriding imperative of the “Studies of Inter- and Trans-disciplinarity” (ESIT) is that interdisciplinary work can help in the process of democratizing the relationship of science and society while also facilitating a more pluralistic and collaborative relationship among those in different disciplines (Vienni, 2014a, 2014b). As a field of academic specialization, ESIT can also contribute substantively to promoting interdisciplinary studies. Moreover, it seeks to support that group of researchers who strive to understand disciplines outside their own, while cultivating their own disciplines, and thereby helps to solve problems in interdisciplinary theory or practice. This approach seeks to systematize the views that have been developed in Uruguay (Simini & Vienni, 2016) and the rest of Latin America in order to advance their integration in the three dimensions of academic work, namely research, teaching, and extension. This Special Section of *Issues in Interdisciplinary Studies* constitutes one strong example of what the field of “Studies of Inter- and Trans-disciplinarity” can be and do. Dialogues among Latin American scholars are possible as are those among Latin American scholars and those in the rest of the academic world.

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