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A multi-scale perspective for assessing publishing circuits in non-hegemonic countries

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ABSTRACT

University Rankings and impact factor indicators were critical in the extension of the global belief in the intrinsic academic value of “World Class Institutions,” along with the international recognition of successful individuals forged through mainstream journals. However, these supposedly global standards were not adopted passively, nor massively, in the so-called periphery. Drawing from quantitative and qualitative studies of evaluative cultures in Latin America, particularly in Argentina, this paper observes various circuits of recognition and different paths for prestige-building. First, it discusses a multi-scale approach to national scientific fields highlighting heterogeneity in terms of the orientation of research agendas and styles of academic publishing. Evaluative cultures are examined as a complex set of instances of legitimation that provide room for maneuvering between global standards and local orders. Second, the paper delves into the role played by Latin America in forging an open access, non-commercial, regional publishing circuit with a dominant, but not exclusive, composition of journals from the social sciences and humanities. Finally, it argues that facing this dynamical publishing ecosystem developed in the public domain, national research assessment systems are alienated by incentives directed only to performance in mainstream publishing.

KEYWORDS

Multi-scale perspective; circuits of recognition; Latin America; Argentina; research assessment

PALAVRAS-CHAVE

Perspectiva multi-escalar; circuitos de consagração; América Latina; Argentina; avaliação acadêmica

PALABRAS CLAVE

Perspectiva multi-escalar; circuitos de consagración; América Latina; Argentina; evaluación académica

Uma perspectiva multi-escalar para avaliar circuitos de publicação em países não hegemônicos

RESUMO

Os rankings universitários e os indicadores de fator de impacto de periódicos foram fundamentais para espalhar a crença global no valor acadêmico indiscutível de “instituições de classe mundial,” bem como no reconhecimento internacional de indivíduos de sucesso por meio de sua participação em revistas mainstream. No entanto, esses padrões supostamente globais não foram adotados passivamente, ou em massa, na chamada periferia. Com base em estudos quantitativos e qualitativos sobre culturas avaliativas na América Latina, em particular na Argentina, este trabalho aponta vários circuitos de reconhecimento e diferentes

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caminhos para a construção de prestígio. Propõe uma abordagem multiescalar para analisar os campos científicos nacionais, evidenciando a heterogeneidade ao nível dos estilos de publicação, descrevendo as culturas avaliativas coexistentes e um conjunto de instâncias de legitimação que proporcionam espaço de manobra, na fronteira entre o padrão global e local. Em seguida, é analisado o papel desempenhado pela América Latina na criação de um circuito regional de publicação de acesso aberto desmercantilizado que tem um importante componente das ciências sociais e humanas, mas não exclusivamente. Por fim, argumenta-se que, diante desse ecossistema dinâmico de publicações desenvolvido no domínio público, os sistemas de avaliação da ciência parecem alienados por direcionar seus incentivos apenas ao desempenho no circuito mainstream.

Una perspectiva multi-escalar para evaluar circuitos de publicación en países no hegemónicos

RESUMEN

Los rankings universitarios y los indicadores de factor de impacto de las revistas fueron claves en la extensión de la creencia global en el valor académico indiscutido de las “instituciones de clase mundial,” así como en el reconocimiento internacional de individuos exitosos forjados a través de su aparición en las revistas de corriente principal. Pero estos estándares supuestamente globales no fueron adoptados pasiva, ni masivamente, en la llamada periferia. A partir de estudios cuantitativos y cualitativos sobre culturas evaluativas en América Latina, particularmente en Argentina, este trabajo señala varios circuitos de reconocimiento y diferentes caminos para la construcción del prestigio. Propone un enfoque multi-escalar para analizar los campos científicos nacionales, destacando la heterogeneidad en términos de estilos de publicación. Se describen culturas evaluativas co-existentes y un set de instancias de legitimación que brindan margen de maniobra en la frontera entre los estándares globales y los órdenes locales. Luego se desenvuelve el papel que juega América Latina en la creación de un circuito regional de publicación de acceso abierto desmercantilizado que tiene un importante componente de las ciencias sociales y humanas, pero no exclusivamente. Finalmente, se argumenta que, frente a este ecosistema dinámico de publicaciones desarrollado en el dominio público, los sistemas de evaluación de la ciencia parecen alienados, al dirigir sus incentivos solo a la performance en el circuito mainstream.

Recent studies on the international circulation of knowledge have noted several changes in publishing patterns that provide a more equitable cartography of academic development. Along with increasing international collaboration, a larger and more diverse audience has been renewed by open data platforms, information engines and scholarly networks. The growth in published papers from China and other non-traditional centers has indeed changed the distribution of shares in bibliometric reports from Scopus or Web of Science (now Clarivate). However, the structure of the collaboration “ties” observed by classic studies of science (Schott 1998) is still in force within

mainstream journals, where the direction of the collaboration goes from Southern countries towards the United States or Europe. The impact factor, on its part, continues concentrating prestige in the hegemonic centers and causes preferential attachment by Southern authors based upon reputation. Aguado-López, Becerril-García, and Godínez-Larios (2018) observed that to publish with prestigious researchers is the main incentive for international collaboration by Latin Americans because it is believed they increase visibility; institutions share this assumption. According to Wagner, Whetsell, and Mukherjee (2019), the audience-effect increases citations of collaborative papers, but transaction costs and communication barriers decrease or suppress novelty.

There is an extensive tendency towards reinforcing internationalization in higher education and research institutes, regardless of the policy context, under the assumption that promotion of English language and increasing the number of internationally co-authored publications will benefit a national science system, as it will result in higher citation impact (Robinson-García and Ràfols 2019). Several studies have observed the asymmetric exchange value of English over the rest of the languages, given its high valorization by researchers, universities and funders. For non-hegemonic countries, this asymmetry is reinforced by the unequal access to specific training required for academic writing in English (De Swaan 2001; Lillis and Curry 2011; Gerhards 2014).

Indeed, long-term studies of academic publishing point out persisting North–South asymmetries in the distribution of academic prestige that still influences collaborative research decisions. The hypercentrality of English and the universalization of impact standards were pushed by the indexing systems created by the Institute for Scientific Information in Philadelphia. The Science Citation Index, launched in 1964, was critical for the increasing accumulation of “international” prestige by certain *centers of excellence*. While this style of publishing became synonymous with mainstream science, everything published outside this indexing monopoly became marginalized as “local” science (Guédon 2011). Moreover, indexes served for more than four decades as the unique source for world reports, international indicators and comparisons.

This phenomenon was not contemporaneous across all scientific areas. At first, the social sciences and humanities were marginalized from the pool of gatekeepers of “mainstream” criteria. In the last decades, however, they entered belatedly but firmly into the new logics of the academic publishing industry. Eventually, the *mainstream-periphery dichotomy* was successfully globalized – the “centers of excellence” being conceived as the autonomous/universalist, with the “outsiders” as dependent/parochial. In an activity such as scientific research, which is tightly attached to symbolic power recognition, the belief in the intrinsic academic value of mainstream journals oriented the publishing practices of individuals, parallel to the rewards offered by institutions. University rankings boosted the link between publishing performance and funding decisions by using mainstream databases for defining institutional scores. This reoriented the evaluative cultures at universities, where tenure and promotion became attached to what Gingras (2016) describes as the uses and abuses of impact factors.

I agree with this description and I believe it is accurate concerning a long-term historical account of existing global hierarchies. However, this does not mean that the so-called periphery is a mere reflex dependent on the hegemonic centers. When the limitations of mainstream databases are surpassed and empirical studies of concrete scientific national fields are performed, these shed light on different landscapes. In this paper, I argue that

those global standards were not adopted as massively and passively as imagined, but rather had an unequal incidence according to the history and state of each national field.¹ As considered by Losego and Arvanitis (2008), non-hegemonic countries have a subaltern role in the international division of scientific work, too often undertaking “secondary” functions or subordinate roles in research collaboration. Non-hegemonic countries do not have financial instruments capable of influencing the broader goals of knowledge production; nonetheless, they have margins for influencing the production of knowledge at the national level, in addition to the choice of subjects and partners with whom they cooperate.

The empirical findings and the analytical framework presented in this paper aim to calibrate this local/national margin of autonomy in non-hegemonic countries such as Argentina, which are not merely collectors of empirical data as formulated by the idea of the international division of scientific labor. These observations have been developed within a research program existing since 2004, with the initial task of making a contribution to “academic dependency” studies. The results accounted for scientific development in Argentina and Chile showing high levels of institutionalization, professionalization and internationalization in a rugged route from 1950 until the present. Instead of a hierarchical and vertical structure based on autonomous or dependent nations, the cases under study evidence intermediate situations compatible with “peripheral centers” (Beigel 2013). Academic creativity was highlighted along with heteronomy; hence what started as a search for dependency ended up as a quest for scientific autonomy, observed on par with the subordination extensively criticized in the Latin American intellectual milieu. Accordingly, the structure of the academic world appeared more related to the segmentation produced by diverse circuits of recognition: a multi-scale structure that was visible at the regional, the national and the institutional level. Additional studies on the vigorous Latin American academic publishing system and the resilience of local publishing has led us to recognize alternative means of legitimation of scientific knowledge (Beigel 2017).

Four sociological concepts pave the way for the multi-scale and relational approach presented in this paper: (a) field, (b) structural heterogeneity, (c) circuits of recognition and (d) evaluative cultures. In the first part of this paper I argue that the Bourdieusian concept of field is still a useful tool for understanding the local struggles for academic prestige, in the midst of various principles of legitimation in conflict. In heterogeneous scientific fields such as in Argentina, several institutional and geographical asymmetries explain the fact that highly internationalized researchers co-exist with locally grounded scholars. Based on previous studies, national evaluative policies and institutional cultures are presented as the crux for observing diverse circuits of recognition and the resilience of local circuits. In the second part, I delve into the role played by Latin America in forging an open access, non-commercial, regional publishing circuit with a dominant but not exclusive composition of journals from the social sciences and humanities. I will argue that in

¹According to Paradeise and Thoenig (2013), this can also be observed within some traditional academic centers. Rankings had a strong influence in the belief that academic quality at the local level came from directing it towards global standards. But studies on a concrete set of institutions from different hegemonic countries show that diversity remains, because a set of factors intervene when considering how single institutions position themselves in terms of quality-definition. They combine resources and create alternatives based on their organizational and cultural governance path dependence, and in accordance with the state of each national space or research field.

face of this dynamical publishing ecosystem and of scientific policies developed mainly in the public domain, the national research assessment systems appear *alienated* by their insistence in directing incentives only to performance in mainstream publishing.

1. Heterogeneous national fields

Maton (2005) discussed the usefulness of Bourdieu's conceptual framework for the analysis of academic fields, distinguishing between *relational* and *positional* autonomy. The first concerns the principles of legitimation within the field and the second the relations with other fields. The main challenge to the concept of scientific field and its keystone concept of "autonomy," he argues, comes from academic globalization and the supposition that local and national borders have lost their primacy. It is undeniable that the efficiency of the Impact Factor as a resource for prestige-building has crossed disciplines, language and geographical boundaries. University rankings and citation indicators were critical in the success of "World Class" institutions' standards and the performance-metrics of internationally recognized academic actors forged through mainstream journals. This happened, as argued by Maton (2005), alongside a progressive externalization of traditional scientific authority, which undermined the academic autonomy of the university as it was understood in the 1980s.

However, the fact that bibliometric indicators were increasingly used in research assessments around the world is not itself evidence for the de-nationalization of scientific fields. Several studies have shown that there are regional alternatives for academic publishing that have been supported by public agencies in Latin America (Vessuri, Guédon, and Cetto 2018) and that local publishing in non-indexed circuits is still at work (Ramos Zincke 2014; Mugnaini et al. 2019; Salatino 2019). The empirical studies by our research team in Argentina show that several evaluative cultures co-exist and that the academic field is a ground for the struggle between diverse principles of legitimation and various styles of circulation of knowledge (Beigel and Bekerman 2019). The agencies that finance research projects and the universities that grant tenure and promotion are mostly of a national and public nature. Accordingly, scientific policies and institutional cultures are strong players in the unstable frontiers of the scientific field.

The Bourdieusian concept of autonomy is and always has been of a relative nature because it is defined by the relation of the observed field with other fields. Researchers' strategies are both scientific and social, because the scientific field is seen by Bourdieu (2003) as a space of tensions between scientific authority and power over the scientific world – the latter accumulated by paths that may not be strictly scientific. The rules and principles of legitimation that mold these relations of power are expressed in a specific and historical academic *illusio* (Bourdieu 1999). In previous works, I have delved into the features of this collective belief that can be characterized by the ideal of "universal science," "national development," "science for the people," or others, according to the history of each national field and their forms of integration into academic globalization. Contrary to the sealed-off characteristic of the concept of system, the notion of field is meant to be understood as a relational structure and as a result of a concrete historical processes of professionalization and institutionalization (Beigel 2013).

In classical critical studies of science and university, the idea of academic "periphery" was frequently identified with the local and the non-universal. Everything produced outside the "centers of excellence" was considered as dependent, imitative, politicized

and/or mostly dedicated to empirical surveys instead of generating theories or innovative concepts (Ben-David [1977] 1992; Alatas 2003; Altbach, Reisberg, and Rumbley 2009). Driven by the superiority of the mainstream circuit in terms of globalizing a legitimate form of publishing, a highly unequal World Academic System indeed emerged. Several studies have shown the scarce international circulation of Latin American social sciences and the humanities within Scopus or WoS journals, to a great extent due to the effect of the hypercentrality of English (Ortiz 2009; Blanco and Wilkis 2018). Concerning the natural and exact sciences, Kreimer (2006) has observed a tendency to a subordinate integration to international networks and dominant mainstream publishing practices. Kreimer and Vessuri (2018) argue that, in this context, science in Latin America developed in the midst of two constitutive tensions: (a) the struggle for the definition of legitimate knowledge given the influence of Western science and (b) a permanent oscillation within the institutionalization process regarding the integration to international networks while coping with local needs.

Multiple structural and historical asymmetries concur in these trends observed in the circulation of knowledge produced in Latin America: what Martin and Göbel (2018) describe as interdependent inequalities based on ethnics, gender and language. But beyond the success of the mainstream narrative and its dominant databases, alternative circuits and diverse styles of production can be observed. Using an analogy with the concept of the modern world-system described by Wallerstein (1991), it can be argued that the mainstream circuit is far from being the only academic world existing or that it was capable of destroying the rest of the contemporary academic worlds. To a great degree, this is so because national R&D systems still elaborate evaluation standards that govern the major share of individual tenure positions and promotions, also determining criteria for public institutional funding.

The case of Argentina is interesting because it shows the development of a double-headed academic elite: highly internationalized scientists producing knowledge under mainstream evaluation criteria, aspiring for global success; living together in universities with strong academic groups attached to local agendas and benefitting from institutional/local recognition. These opposite scholarly styles do not simply stand on the disciplinary difference between “hard” and “soft” sciences. On the contrary, they evolve across disciplines and are related to diverse evaluative cultures emerging basically within an institutional stake: the tense hinge between the tenure and promotion standards at the National Scientific Research Council (CONICET) and the autonomous standards used by national [federal, public] universities. Within the latter, we find a large group of researchers resisting the imposition of global publishing standards, benefited by a national university classification of researchers. At CONICET, a “universalistic” orientation can be observed, attached to international agendas, broadly extended across all disciplines including the social sciences and humanities. Among these internationalized researchers prevails a belief in an academic prestige embodied in the “pure” scientific capital represented by mainstream publishing although, for the social sciences, Latin American journals serve the same purpose in regards to tenure or promotion (Beigel 2014).

The classifications involved in this opposition between a local and a universal scientific *illusio* bring back the image of the polarization proposed by modernization theory, where the local is identified as the traditional and the universal as the modern. This framework

takes for granted that the first must evolve from parochialism to global science. And precisely here is when the concept of “structural heterogeneity” created within Latin American traditions comes to play. The concept itself appeared by the end of the 1950s along with the development of the historical-structural method in an indigenous variant of structuralism that was born at the Economic Commission for Latin America (ECLA). It was Celso Furtado (1959) who argued that “development” within the periphery was not resulting in the homogenization [modernization] of the structure, but rather the contrary. Accordingly, underdevelopment theory was to be replaced by a theory of social and economic heterogeneity. Mallorquin (2011) inferred that the concept of “structural heterogeneity” came to be understood as different styles of production co-existing in conflict within a nation-state. Instead of imputing them to a sort of dualism between modern and traditional social relations, the causes were to be found in the asymmetries of power embedded in the structure.

Our study of the scientific expansion of Argentina (2003–2015) highlighted the main features of the heterogeneous nature of this national scientific field: the tensions between CONICET and the national universities; asymmetries in the distribution of national research capacities; conflictive evaluation cultures; segmented circuits of recognition and highly diverse regulations for tenure at national universities (Beigel, Gallardo, and Bekerman 2018). One of the most persistent inequalities was observed in the centralist historical pattern dominating in the country: a single national university (UBA) gives titles to more than one-third of PhD holders and lodges a similar share of human and material resources for all scientific areas. However, this concentration at UBA does not imply a polarization of the internationalized elites alone. The same university also dominates locally oriented scholarship because its institutional structure is autonomous and co-governed with an active student movement. The same can be said for other national universities such as La Plata, Córdoba or Rosario for example. Traditional chair systems prevail in these big universities, thus the “temporal” power of head professors and deans has a direct influence on the selection of committees for tenure and promotion.

In this complex institutional setting, to what extent can Argentina be considered a national field in Bourdieusian terms? Three empirical observations serve as proof of structural integrity. Firstly, researchers at CONICET yearn for teaching posts at the university and aspire to obtain the highest category at the university’s researcher classification. On their part, professors at the university aspire to be considered comparable to CONICET researchers. Secondly, both professors and researchers participate in the evaluation committees at the national classification performed by the Bureau of Education (PROINCE, for its Spanish acronym), and an important part of each group proudly exhibit the highest *Category I*. Thirdly, the public universities play a central role in the scientific and higher education national policies through coordination by the Council of Rectors. Eventually, these asymmetries and tensions co-exist at the universities – particularly in the large and prestigious University of Buenos Aires.

2. Circuits of recognition and evaluative cultures

The Argentinian case shows that “peripheral centers” have become increasingly complex and are characterized by contradictory trends – they are still subaltern concerning global hierarchies but increasingly dominant in a national and regional perspective. Diversity in

terms of publishing landscape is more visible currently, given the available empirical studies that collect data beyond mainstream databases. In a recent study of the citations of Argentinian publications in foreign patents, Codner and Perrota (2018) observed the flows of locally produced knowledge onto technologies developed by companies from the United States, Great Britain, China and Germany. This is evidence, among many, that peripheries are not just collecting data for their analysis in the central countries, but at the same time, a demonstration that to produce high-quality knowledge is not enough to prevent the most recent forms of brain drain.

During the scientific expansion in Argentina, both the internationalist and the nationalist orientation (along with several intermediate profiles) experienced a process of professionalization – not only in terms of scientific institutions and research resources but also through local academic journals. The existence of two national classifications for researchers, one at CONICET and the other at the national universities, explains the resilience of local circuits and the resistance of national standards against global hierarchies. At the national (public) universities, professors with locally grounded circulation may win a tenure competition over highly internationalized scientists, while the latter have higher chances of taking a position as researchers at the national agency (CONICET) where global standards prevail. This situation is explained by the strong tradition of university autonomy existing in the country, complemented by an active student movement, which is reinforced by the decisive participation of the presidents of the national universities in the formulation of national policies for higher education. The Incentive Program for university researchers-professors (PROINCE) was created in 1993 with the direct intervention of the Council of Rectors and in resistance to the internationalized profile of CONICET researchers. It still works as a source for the validation of the nationalist/localist academic elite and the university decisions on research funding.

These two academic careers², based on two different evaluative cultures (CONICET and PROINCE), have developed around different *illusio*: one perceived as “international” prestige and the other one built as “local” recognition – at the institutional level. However, both are conferred by *national* classifications: the first rarely implies effective “global” recognition and the second is not only valuable at a provincial scale. The highest categories at PROINCE (I and II) comprise those unique people qualified to aspire for direction roles in research grants and to be selected for national evaluation committees. Even if these two illusions work as legitimate classifications and are central in the disputes in the field, it is convenient to mention that they are not necessarily analogous with empirically observable research agendas. Rather, local issues are also carried into mainstream publishing while universal discussions can be found in the papers published in local journals.

The field approach is particularly fruitful to address the distance between the representations based on policy incentives and the publishing practices visible in the complete curriculum vitae. Based on a survey of 23,852 publications selected as their “five more relevant career-publications” by researchers at CONICET when applying for promotion, the results showed that only 7% of total publications were published in Argentina.

²CONICET has a career development pathway with five positions: assistant, adjunct, independent, principal and superior researcher. PROINCE has five positions (I–V): I being the most valued and prestigious. In Argentina’s national universities only professors with category 1 or 2 may evaluate scientific projects and participate in the national researcher classifications. CONICET researchers who have a teaching post also have to comply with this requirement to qualify for participating in evaluation committees.

Concerning language, on average, publications in English represented 4 out of 5 selected. The type of published works reveals a moderate dispersion considering age, with a slightly higher prevalence of books and book chapters among the older generations. 4.4 out of 5 of the published works chosen by the 31–44 age group were articles – a signal of the increasing extension of the paper as the dominant production style among the youngest in all scientific areas (Beigel 2017).

Interestingly, the comparison with the complete CV of these researchers highlighted more frequent publications in national journals and publications in books and in Spanish in all scientific fields. These practices of publication evidenced the activity of multi-scale circuits of recognition and diverse research profiles scarcely reflected in the indicators used in research assessment. Participant observation and a survey made of the coordinators of all the scientific committees that perform tenure and promotion evaluations at CONICET completed the picture and showed that the global standards applied in the process of evaluation molded publishing practices but did not “colonize” academic trajectories. Even in the disciplines most inclined to mainstream publishing, chapters in national books and papers in local journals are significant. 75.5% of all CONICET researchers have published at least on book chapter (Beigel and Gallardo 2020). Accordingly, several scales of circulation can be found in the same researcher’s itinerary, being the more ample variety more frequently linked to the social sciences and humanities.

In this respect, it is relevant to account for the resistance of the social sciences and humanities at CONICET against the hegemonic orientation to measure academic careers through Scopus journal rankings or the WoS impact factor. After years of discussions among “hard” and “soft” scientists in this agency, a consensus was reached on the existence of three groups of journals, according to their “international recognition.” For the social sciences and humanities, the Directory of CONICET adopted Resolution N° 2249 in 2014, according to which the most valued Group 1 includes journals indexed in WoS, SCOPUS, but also SCIELO and afterwards, the LATINDEX Catalogue. This classification governs the assessment of candidates for tenure or promotion at the Qualification Board³, the highest level instance of evaluation, historically more reluctant to accept non-mainstream publishing. As a result, the practices of publishing by the social sciences and humanities researchers have been increasingly oriented to Latin American journals, perceived as a legitimate form of internationalization. Moreover, this norm determined the survival of hundreds of scientific journals indexed in the regional repositories because it had a direct incidence in the continuous flow of articles by the young candidates for tenure at CONICET.

A similar performative effect of the evaluative culture was observed in a study conducted in the national classification, PROINCE. It consisted of participant observation in evaluation committees of all disciplines during 2016–2018. The evaluation grid pondered not only publishing but also teaching, university administration positions, technological transferences and extension. When discussing scores for the output of each candidate, frequent struggles between evaluators affiliated to CONICET and non-CONICET professors occurred around the hierarchical difference between international and local publishing.

³The Qualification Board is integrated by representatives of all scientific areas. It assesses all the reports prepared by the disciplinary committees for tenure or promotion before the final decision taken by the Directory.

But at the end, the formal PROINCE criteria prevailed: all publications were to be considered valuable; only “preferably” as the norms say, those in indexed journals. No reference to impact factor or international publishing is included in the regulations. The qualitative observation of the trajectories in the final list of the higher categories highlighted the presence of international and local profiles of circulation, and these cases were not only visible in the social sciences and humanities but also in other scientific areas. A strong presence of the highest PROINCE categories was observed within the oldest and biggest universities; but simultaneously with the institutional share of PROINCE classified professors within faculty growing in direct relation with the distance from metropolitan universities. In other words: the more provincial the university the more PROINCE professors and the less researchers at CONICET will be observed (Beigel 2019).

The reader could ask us if our observations on the circuits of recognition and the co-existing evaluative cultures could be verified only in the Argentinian academic field. While the particular nature of this case is indeed in force, several studies show that local, national and regional forms of circulation are observed in most Latin American scientific fields. In countries highly adapted to global standards such as Chile, Ramos Zincke (2014, 2020) has also observed a dynamical local circuit mostly in the book format. In the case of Brazil, Mugnaini et al. (2019) analyzes the complete list of publications of 260,663 researchers from the database LATTES, which evidences that the Brazilian journals have a relevant share of the articles in all scientific areas. This reveals the vitality of the national journals as a communication space for scientists in this country – in part fed by the increasing number of Brazilian journals edited in English but in part stimulated by a dynamical national community. Of the total journals extracted from the articles surveyed (23,000) 60% are not indexed Scopus, WoS and neither in SciELO.

3. On the alienation of the Latin American research assessment systems

Among the circuits of recognition that cross-through national scientific fields in the region, Latin American journals play a significant role fostered by its background as an intellectual community. It is likely that the little attention given to this regional circuit in S&T studies is due to the weight of the national focus in the traditional historiography of science. The marginalization of the local by the global, the national by the universal, was deeply embedded in the dominant mainstream narrative. This had a narrowing effect in the notion of “internationalization,” on its own incapable of including regional alternative paths. In previous studies (Beigel 2014), I have delved into the historical stages of this publishing circuit. It firstly evolved since the mid-nineteenth century until 1940s as an intellectual community linked through correspondence and publishing networks. In the second stage, it was consolidated through regional institutions for research and teaching such as ECLA, CELADE, CLACSO, FLACSO, DESAL, ILADES mostly created during the 1950 and 1960s. The main concern for librarians in those years was to compile bibliographies capable of visualizing the scientific research produced in each country/institution. The social sciences and humanities played a relevant role in this circuit, but all scientific areas were involved in this task of sharing information and building regional databases at that time. With the creation of the Biblioteca Regional de Medicina-BIREME in 1967 at Sao Paulo (today The Latin American and Caribbean Center on

Health Sciences Information), the first bibliographic information database for the health sciences emerged. Afterwards, two indexing databases were created by the Autonomous National University of México, Clase (1975) and Periódica (1978), covering the first the SSH and the second the exact, natural, biological and agricultural sciences.

In the 1990s, the circuit evolved into its third phase as a publishing environment dominantly developed at public universities with a precursory vision of the value of open access. Three repositories were created (Latindex 1994; SciELO 1998; Redalyc 2005), with the aim of making visible the Latin American production and evaluating the scientific journals under quality criteria (Alperin et al. 2014; Vessuri, Guédon, and Cetto, 2014). The first two repositories have several headquarters within national agencies and accordingly constitute an international collaborative network. In the last decades, the three differed in terms of the strategies to achieve this goal. SciELO and Redalyc built advanced models of electronic publishing and metadata at the level of the article. Redalyc focused on the social sciences while SciELO has more disciplinary diversified collections. Vélez-Cuartas, Lucio-Arias, and Leydesdorff (2016) compared WoS and the SciELO database. Interestingly, most publishing institutions in WoS are commercial publishing houses while university presses and professional associations roughly account for 13.6% of these journals. The landscape is the opposite in SciELO, where journals from universities, public institutions and academic associations represent the majority (89.1%). Concerning language, Redalyc journals are mostly in Spanish while SciELO publishes 81% of its articles in Spanish, 17% in English and 2% in Portuguese (Santos 2019).⁴

Currently, there are at least 10,000 active scientific journals in Latin America and around 60% are evaluated and indexed in these repositories – a final empirical description will be available after Latindex Catálogo 2.0 is finished. Multiple indexing is very frequent, so it is highly difficult to establish exact numbers. Unsurprisingly, this regional circuit is barely considered in the global accounts on academic publishing. A technical limitation has fueled this situation: SciELO, Redalyc and Latindex are disconnected between themselves and their databases are not inter-operable. The Latindex Catalogue includes an important share of indexed journals that have a website, but not metadata at the article level. As a consequence, we do not have studies on the complete corpus of publications circulating in those estimated 6000 indexed journals. This is the main task of the Project OLIVA that we have launched at the National University of Cuyo in 2019, now finished with its first stage of compiling the documents published by SciELO and Redalyc with the collaboration of both repositories. The preliminary results show a total 1,772 journals, 924,212 documents and 2,836,067 registries of authors. This production covers the period 1909–2019, including journals from 15 Latin American countries. Of the total articles included in the database, 44% were published in Spanish, 32% in Portuguese and 23.7% in English. Of the total articles 35.10% correspond to social sciences and humanities, while 26% belong to Health and Medical Sciences. The multi-disciplinary journals, the Agrarian Sciences (11.50%) and the Natural and Exact Sciences (12.90%) also have a relevant share of the articles.

All this shows that the Latin American publishing circuit is not restricted to the social sciences and humanities, nor exclusively to Spanish and Portuguese languages. Rather it

⁴The Brazilian national Scielo collection is the only one that has shifted significantly to English in the last 10 years. Santos (2019) has observed that by 2009 English represented 40% of articles, while by 2018 this share rose to 71%.

is an international circuit with highly diverse productions from different scientific areas. But why are these journals scarcely considered in S&T global reports or within career evaluations? Aside from the technical limitations mentioned above, a far more complicated phenomenon contributes to undervalue these journals. I am referring to the fact that the internationalized academic elites in the region choose mainly mainstream journals to publish their research results, regardless of the accessibility of the journals – frequently paying Author Processing Charges with public resources for journals that are not available for the local readership. This is in vivid contrast with the dominantly public nature of the national S&T systems and national legislations demanding full and paywall-free open access of publicly funded research. A striking divide between the orientation of publishing practices and the development of policies towards open infrastructures along with the existence of above-mentioned professional non-profit repositories raise an impression of alienation. A vast part of the explanation for this phenomenon resides in the fact that most national agencies and universities have their incentives directly aligned in favor of mainstream publishing. The evaluative policies keep stimulating the enchantment with the journal impact factor by rewarding these indicators in individual and institutional evaluations. The need to comply with university ranking competition drives many institutions to restrict their own margin for maneuver replacing the local standards with heteronomous criteria.

There is a certain consensus about the fact that evaluation is a tool to achieve scientific policies because it shapes how research systems judge, value, justify merit and assign limited resources. Performance standards do not emerge merely from the opinions of experts involved in research assessment. Even where peer review plays a relevant role, this individual judgement is not based uniquely on cognitive and extra-cognitive factors. Evaluative cultures are developed in a space of possibilities marked by three relevant factors. In the first place, an institutional culture that relates the evaluators' judgements to the legitimation principles operating in their context. Secondly, the role played the national classifications of journals that determine objective scores in the evaluation grids according to their agreed upon value. Thirdly, promotion and salary incentives that have proven that publishing practices are highly adaptative to recognition stakes and monetary rewards. Accordingly, revisions of national assessment policies can play a critical role in the estrangement between the autonomous development of public infrastructures for multi-scale fields and the heteronomous impulse of achieving global standards.

4. Conclusions and policy remarks

In this paper, I started by discussing the Argentinian case in order to show that science has evolved outside the mainstream narrative through double-headed academic elites and that these have fueled both international and local publishing practices. The existence of different (even opposite) evaluative cultures in a higher education system with a long and strong tradition of university autonomy created several intermediate profiles of production and circulation that also favored publishing in the regional (Latin American) circuit as a means for acquiring tenure at the national scientific council (CONICET). Argentina is a singular case with a relatively autonomous framework for research assessment, but several studies point to the fact that these different circuits of recognition are at work also in other countries of the region. Even in those countries, where research

incentives have focused on improving performance in journal impact factor and university rankings, the resistance of researchers circulating in alternative circuits can be observed by the relevant number of national journals indexed in regional repositories. Other relevant research profiles can be found in projects of university extension and technological transference, an old tradition of “third mission” that is present throughout the whole Latin American geography since the beginning of the twentieth century. Even if university extension (community service) was increasingly undervalued against academic research, it still remains as a dynamical local circuit for knowledges co-produced with the community.

The heterogeneous nature of these scientific national fields can continue reproducing internal asymmetries or, on the contrary, serve to reduce inequalities if the national scientific agencies start by recognizing different circulation styles. There are voices all around the world now calling for a move in scientific policies towards contextualized evaluation criteria. As argued by Ràfols (2019) firstly by building indicators relevant to the assessed areas and reducing the number of evaluation processes in order to prioritize depth, with less bureaucratic impact and more formative information for those evaluated. Secondly, by promoting the pluralization of criteria to reflect the different academic practices which are part of science according to the types of research, institutions, and the interdisciplinary nature and the diversity of links with society. Thirdly, aiming for a social diversification of “peers,” introducing social agents in the evaluation process and the research itself through citizen science.

In order to deploy the benefits of the multi-scale circulation observed in our research, part of this paper was dedicated to the Latin American publishing space, which has a long intellectual history and became a *circuit of recognition* by the same time the mainstream circuit was evolving. The former is as international as the latter, although it has been devalued by the success of mainstream journals in extending the belief in their universality. Its strength and survival over time draw on the predominantly public nature of scientific research in the region, but this Damocles’s sword remains hanging over the alienation of the research assessment systems.

I have argued that the undervaluation that affects Latin American journals is not only due to this estrangement of the national R&D systems, or to the fact that they are mostly published in Spanish or Portuguese. It is also due to the lack of inter-operability that fragments indicators for the evaluation of individuals and institutions that are critical for research assessment. This finally contributes to the conviction that the harvest of international scientific output data can come solely from the “global” mainstream databases. The Latin American Forum on Research Evaluation (FOLEC, for its Spanish acronym) created by CLACSO in November 2019 has argued for the urgent need of a Latin American platform to create regional indicators of production and circulation. Many different efforts are leading to this direction, the federation of repositories La Referencia being a keystone. But its concrete viability depends on a regional collaborative initiative involving all the stake-holders.

Finally, one of the reviewers of this article suggested that the multi-scale and relational perspective proposed here could be used to provide insights to understand local or national circuits in the Global North. Indeed, even if there was no space to discuss here the available literature on countries such as France or Canada, several studies point out that “mainstream standards” and university rankings did not fully impose a unique criteria

for academic quality across all institutions (Paradeise and Thoenig 2015; Schimanski and Alperin 2018). However, an academicist style of evaluation based on published results primed the social relevance of research, teaching excellence and service. China is the best example of a national scientific community that was driven forcefully to mainstream publishing and is currently re-valorizing national journals, social relevance and local agendas. Accordingly, it becomes increasingly relevant worldwide to recognize diverse research profiles introducing multidimensional models for research assessment. In line with the movement of open science, there is a call for a reconstitution of the tie between the production of knowledge and the demands of society. In this context, a multi-scale approach can help to recover biblio-diversity and local languages, boosting instead of reinforcing exclusiveness between the local and the universal conversation of science.

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