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CLACSO

TOWARDS A TRANSFORMATION OF SCIENTIFIC RESEARCH ASSESSMENT IN LATIN AMERICA AND THE CARIBBEAN

Evaluating Scientific Research Assessment[1]

1 This document is part of the PARA UNA TRANSFORMACION DE LA EVALUACIÓN DE LA CIENCIA EN AMÉRICA LATINA Y EL CARIBE Series (FOLEC, CLACSO) *(TOWARDS A TRANSFORMATION OF THE SCIENTIFIC RESEARCH ASSESSMENT IN LATIN AMERICA AND THE CARIBBEAN Series)* which is made up of three documents: *Evaluando la evaluación de la producción científica* (Evaluating Scientific Research Assessment) devoted to gathering the main elements pertaining to the in-depth debates which affect academic assessment in Latin America and the rest of the world; *Diagnóstico y propuestas para una iniciativa regional (Diagnosis and proposals towards a regional initiative)*, a prepositive document which is offered as a foundation for the regional debate towards the creation of recommendations agreed upon by all CLACSO member centers and a *Declaración de Principios (Declaration of Principles)* which is offered for discussion towards the construction of a common horizon to underpin the regional initiatives and its interaction with the global debates.

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Members of the team: Dominique Babini, Open Access Coordinator and Laura Rovelli, FOLEC Coordinator, with the contribution of Paola Oliveira in technical assistance and the Design team at CLACSO, Gustavo Lema, Director of Communications and Information, Marcelo Giardino, Art Coordinator and Jimena Zazas, Design Center and Web Production.

www.clacso.org/en/folec | folec@clacso.edu.ar

Although the scientific practices which take place at universities and research institutes include diverse activities, such as research, project management, teaching, scientific management, assessment, training of researchers, thesis and fellows supervision, extension, technological transfer and advisory to public or private institutions, among others, in the last decades, the assessment of institutions and individuals has focused increasingly more on the *published results*. Not in any kind of publication but on the paper (understanding by this an article in English published in indexed journals). This phenomenon has stimulated a form of universalism which has had a negative effect on the interactions between science and society, by means of which research has sided more and more towards an endogenous dialogue in the international academic community, thus sacrificing linguistic diversity and the specificity of local agendas.

Publishing continues to play a determining role in the assessment process since an *amateur ethos* remains present in the academic community worldwide. According to Fyfe et. alia (2017) this is based on the certainty that it is vital to share knowledge, assess peer contributions just as our own are expected to be assessed, and to thus maintain a conversation on a global scale. These values appeared to be compatible until the 1970s with commercial publishers seeking to expand circulation across the world. However, these publishing houses used peer review to create an academic prestige economy and, at the same time, they increasingly put up the price of journal subscriptions and books. This in turn called for continued efforts on the part of the academic world to assess and work on the publishing committees at these journals whose economic value increased thanks to its quality certification. In the face of this, we should ask ourselves; why do academics continue to give so much of their time for free to these publishing houses who do not circulate knowledge globally in a democratic and affordable manner? Part of the explanation lies in the success they have achieved at presenting themselves as vital in order to reach the academic prestige which is increasingly longed for by this community (Fyfe et. alia, 2017).

The classification of scientific journals and the citation indexes which appeared in the 1960s in the United States with the *Science Citation Index* slowly drove professors, institutions and governments to the certainty that international journals of an excellence standard could be found in these databases. The commercialization of indexing systems through expensive subscriptions led to the concentration of a greater Impact Factor around certain journals and, as a result of this, in certain institutions. These big academic publishing houses and such sophisticated bibliometrics, drove the legitimization of journal Rankings as indicators of scientific quality. The abuse of these metrics in the assessments of individuals and institutions was increased as a result of the advent of University Rankings and "world" science reports which contributed towards the invisibilization of other manners of production and circulation of knowledge that existed and grew outside the mainstream databases. This specially affected social and human sciences which carry a monographic style and encourage book production, a format left outside of the quantitative measurements within the dominant scientometrics. In addition to this, it was detrimental to indexed journals in repositories alternative to that circuit.

Now, although academic globalization enshrined certain hierarchies and publication styles internationally and these have a significant incidence on the research assessment in Latin America, it is possible to observe a profuse scientific production alternative to the mainstream circuit in thousands of active journals indexed in regional depositories. There is even a large amount of non- indexed journals which verify the dynamism of local circuits. University publishing houses and regional networks produce quality books and it is possible to attest an incipient transfer towards digital editions. These publications, notwithstanding, are not valued to a great degree in academic evaluations not only by the weight of a heteronomous logic but also because of the absence of an inter-operating regional platform which can offer regional, national and local indicators of knowledge circulation. At the same time, multiple forms of resistance against science commercialization found a voice on the world stage. Already issued in the past decade, the San Francisco Declaration (DORA https://sfdora.org/read/es/) as well as other manifestos revealed the multiple distortions that such publication system had created within that initial science universalist vocation.

In this document, we shall analyze the development of research assessment at an international level, the establishment of mainstream publishing criteria as global standard as well as the effects of the use and abuse of scientometrics, to then highlight its specificity across Latin America. Following a review on the dominant forms of assessment of published science and after considering the role of the Latin American circuit in this complex scenario, we shall analyze which are the other dimensions of scientific production of individuals and institutions which should be valued if we are to drive a change towards a socially relevant science. We will specifically refer to the

tradition of university extension which has been strongly developed across all countries in the region and which constitutes a fertile soil towards the promotion of interactions between science and society. It is our hope that this review of the current situation can be nurtured through the debate of the specialists at Member Centers in the region.

The consolidation of publishing as the core of science assessment and the Impact Factor as an indicator of academic quality

Peer review first appeared in the mid-17th century as a way of judging the merit of a scientific contribution by specialists external to the team which had produced such piece of knowledge, who were knowledgeable in the matter at hand and with the objective of determining if this piece of work was to be publication- worthy in a journal. Such assessment practice went on to adopt new forms after the second post-war period when the State began to systemically direct the development of scientific and technological knowledge (Rip 1994, Albornoz 2003). As research gained institutional value at universities, assessment became an increasingly complex instrument, devised to select researchers, assess institutions, or grant subsidies to research projects. Without a doubt, the key element that went on to transform the academic assessment process was journal indexing. The relevance that publication assessment gained in the academic world during the 20th century and the time elapsed in the present century has even given way to a new discipline, bibliometrics, which has garnered an increasing central role in these processes. As time went by, it was possible to observe distortions, uses and abuses of the metrics in a field of study that examines the practice of science assessment (Gingras, 2016).

Generally speaking, peer review is considered the *par excellence* assessment of science. The premise is that this judgement on the quality is an expert decision which can only be made by those with sufficient knowledge of field development. This trust in peers is based on the cognitive dimensions of assessment, thereby highlighting its role in the definition of excellence and considering the extra- cognitive dimensions as corruptive influences. There is currently certain consensus that such judgement on the quality of the research is carried out based on reasonable opinions on the part of academics who reach an intersubjective consensus (Sutz, 2014). Such opinion resulting from the assessment process is never completely objective given it is the result of individual appraisal influenced by multiple factors. According to Lamont (2009), academic assessment is profoundly emotional and interactive and it is culturally embedded in the "social identity" of the researchers, both because of their self-perceptions and because of the ways in which others classify them. The excellence definitions used by those who assess are, therefore, influenced by their subjectivities, their intellectual career paths and social identities. Having said this, these judgements are entwined to epistemic cultures and influenced by the researchers 'career paths (Lamont, 2009).

Now, what role does that *ideal type* of peer review really play in the instances of admission, promotion or categorization of researchers? How much margin do these peer committees have to establish excellence criteria based on the originality and quality of the contributions made by the assessed scientists given the excessive quantification of the assessment processes generally based on the journals Impact Factor? And, finally, which role do peers play in institutional assessments given the increasing importance of University Rankings? In the last decades, academic evaluation has been restricted towards research performance and its measure unit: the citation obtained by scientific publications. In addition to the limitations and losses that such regard caused and which affected the social impact of science as we shall see, the centrality of bibliometrics contributed towards displacing peer review through the establishment of journal indexing as a quality / originality indicator of a scientific article. Biagioli & Lippman (2020) state that it is not only the fact that those who assess the articles do not read them, as is commonly discussed in university hallways. Something much more radical has happened and it is that the scientific quality of an article can be irrelevant in the metrics regimes based on the Impact Factor since they measure the journal citation and not that of the article. They are simply granted a price in an exchangeable currency. An author can change articles with a given impact factor in an academic position, then that institution can negotiate a better global ranking for those and other publications by its employees which can in turn result in a higher number of enrolments, more donations or subsidies (2020: 7). This is the reason why the impact factor is of little help towards

the assessment of scientific strength, originality of the social value of a research and why it has been widely regarded as problematic. (Gingras 2016; Aksnes, D. Langfeldt, L., and Wouters, 2017; Ràfols, 2019).

Thus, when peer review takes place, it is not only mediated by the career path or the identity of the experts but also by an important extra-cognitive factor: the appraisal on the part of journals established as first class and the belief on the part of the peers in the neutrality and objectivity of those measurement systems. Strictly speaking, peer review continues to intervene through the expert opinion of specialists who assess articles in a journal, research projects, admission to a course of studies or promotions. Still, at the time of categorizing, there is a prevalence of classification of journals according to their hierarchy (quartiles) in the indexing systems. There are several studies which analyze how this process began in Exact Sciences and Natural Sciences but progressively extended to other fields, including Social Sciences and Human Sciences, which many times take part in the replacement of the evaluation of originality on the contributions made by a person for the mere "appraisal" of the journals indexing (Ortiz, 2008; Gingras, 2016; Beigel, 2014).

Researchers have long been aware of the need to increase their visibility and citing, reason for which they use different strategies towards that end, by choosing journals with a higher impact factor. Wagner et. alia (2019) have observed a social dynamic in the academic community related to the search towards increasing citations through preferential collaboration with highly regarded authors. Driven by an audience effect, international collaborations under these parameters increases the citation but tends to diminish creativity and originality as a result of communication barriers. There are studies which show that the direct relation between the impact factor and the academic career has resulted in predatory publications and the promotion of all manners of manipulation (Biagioli, & Lippman, A. Eds, 2020). Numerous cases of universities which "bought" through high monthly salaries, highly cited reputations have been observed, who were only requested to move for short periods once a year but who were made to use the institutional affiliations of these universities in their publications with the sole objective of climbing institutional positions in the rankings (Kehm, 2020).

The growing concern on the part of universities in non-hegemonic countries to improve their positions in the rankings, encouraged internationalization policies with the objective of increasing collaborative research and promoting publications in the mainstream circuit. Robinson-García y Ràfols (2019) argue that the tendency to enforce the internalization of research institutes and universities without taking into account the local context takes place under the assumption that the promotion of writing in English benefits the national scientific system and results in a greater impact of the scientific production. All this especially affects the social and human sciences for which the book continues to be a widely extended publication format, since book citing practically does not participate in the dominant database and therefore clearly limits the measurement of the circulation of such production. However, the greatest limitation lies in the scarce representativity of publications from non-hegemonic countries as well as the science published in languages other than English in those databases and their impact indicators.

From a more structural perspective, several studies state that on the bases of the impact factor, there has been a historical construction of a world academic system which modified the academic practices and has "universalized" a language and a writing style (Schott 1988, Gareau, 1988, Vessuri, 1987). There is widely extended consensus among specialists regarding the monopoly that ISI (Web of Science, nowadays Clarivate) had as an indexing system for over forty years. Among its effects, certain institutions, disciplines and languages accumulated scientific capital while they deprived other areas, disciplines and languages of the scientific prestige granted by participating in the mainstream (Guédon, 2011; Beigel, 2014). This transformation turned the assessment task, supposedly based on classifying, appraising and acknowledging, into its flip side, which consists of excluding, belittling and rejecting. Kehm (2020) states that university rankings have duly contributed towards this direction, through the construction of a "deficit" model by which universities are measured based on the criteria resulting from the top ten universities, thereby forcing the institutions towards a never-ending race to improve their positions. They attract but exercise coercion at the same time, by determining and codifying which the legitimate practices and behaviors are in order to participate in the race. This has effectively worked in many institutions which resulted in the rankings forming a sort of transnational coordination of assessment policies (2020: 99).

Thus, this dominant recognition circuit increasingly gained greater efficiency to obtain a work position or improve the advantages of an institution among the university flows. The establishment of the "impact" of these journals contributed towards reinforcing the belief that English was the *lingua franca* on a global scale and the neutrality of a progressively homogeneous academic writing and publishing style (Gingras, 2002). The "universalization"

of these trends was also driven by the growing interest on the part of academics in the so-called "periphery" to capitalize *ISI impact*, which resulted in many journals willing to "be part" to switch to the English language. Notwithstanding, the available papers (Chardenet, 2012; De Swaan, 2001, Lilly & Curris, 2010; Gerhards, 2014) show that linguistic exchanges in the academic world are increasingly asymmetrical because there is an uneven access to training in English language academic writing.

Among the academic communities in non- hegemonic countries where these trends grew resulted in a national segmentation of circulation circuits with academic elites who had an opposing orientation. Some, integrated within the mainstream journal discussions, used to writing in English, while others created publication spaces in native languages in national journals. This phenomenon is more common in the social and human sciences but can be observed across all areas when it comes to researchers´ entire career path reviews. Other polarities arose between the basic science researchers´ profiles and those more oriented towards applied science or technological development. In the case of the latter, the local agenda bears interest so the circulation of knowledge can also adopt styles removed from the "paper" and different communication standards.

When mainstream databases (WoS, Scopus) are used to measure the performance of institutions or individuals, the invisibilization of these diverse and local forms of circulations is further shown. This specially affects the social and human sciences, but it also has a damaging effect on the potentiality of science at large to solve social needs in the local surrounding. These beliefs strongly rooted in the evaluative cultures, also present obstacles to the development of science as a common good. As stated by the European Association of Universities: no matter how hard we try to promote an open science[2], this project will never be achieved if it is not paired with a change in the academic assessment systems (Saenen, Morais, Gaillard & Borrell-Damián, 2019).

Is there a lost science in the periphery?

There is no doubt that the belief in neutrality and the effectiveness of bibliometric indicators has crossed space and discipline borders in the last decades. It is in this sense that we speak of a *World Academic System:* because it was very effective towards building hierarchies legitimated by scientists settled in the center but also recognized outside it. Now, is this world comparable to the modern capitalist world-system which, in the words of Wallerstein (1991), was not the unique existing but was the only one capable of destroying all the other contemporary worlds? If we go back to that accurate old paper by Gibbs (1995) which talked about a "lost" science in the periphery, we will remember he stated that it was left practically invisibilized as a result of not being part of the publishing system created by ISI-Web of Science, a system limited by several bias, among which was the exigence of English and the cost of entering the Science Citation Index. However, he additionally claimed that such mainstream system was built on a vicious circle which when measuring the journals based on their impact, systematically displaced the journals to the periphery (Gibbs, 1995). This is where the Matthew effect takes place and the specific endogamy which describes that publishing circuit starts to affect the journal classification, the article assessment process and even affects the homogenization of writing styles and reference selection.

Since 1995 to date, there have been numerous empirical studies which show that such scientific output existed and continued to develop in alternative trans-national, regional, national and local circuits. Those supposedly global standards based on the impact factor were not adopted in a massive or passive way in the periphery. They had an unequal incidence not only on non-hegemonic countries but even on traditional centers. Paradeise & Thoënig (2013) carried out an empirical study of 16 universities to find out how these institutions and their departments reached what they each call "academic quality". They observed that each institution positions itself in terms of quality standards and combines local and global resources just as the alternatives they have access to, given their organizational and governmental itineraries (Paradeise & Thoënig, 2015).

2 For a critical analysis of the open science model launched in Europe through Plan S, see Debat and Babini (2019) and Aguado-López and Becerril-García (2020).

Along the same line, there are empirical studies which have reported the existence of several circulation forms which are invisibilized due to the exclusive use of databases such as WoS (nowadays Clarivate) and Scopus. We specially refer here to the regional and local circuits which threaten the North- South direction of the internationalization policies (Vélez-Cuartas, Lucio-Arias and Leydesdorff, 2016; Vessuri, Guédon & Cetto, 2014; Beigel, 2014). Diverse circulation practices and publishing styles are developed because there is a "room for the possible" delimited by a set of factors; among them, the history of the field, scientific policies and the current legitimization principles (Bourdieu, 2016). A space which also allows for resistances, which also play a role in the assessment processes, whose incidence depends to a large extent on the margin for maneuver the institutional culture offers (Beigel y Bekerman, 2019).

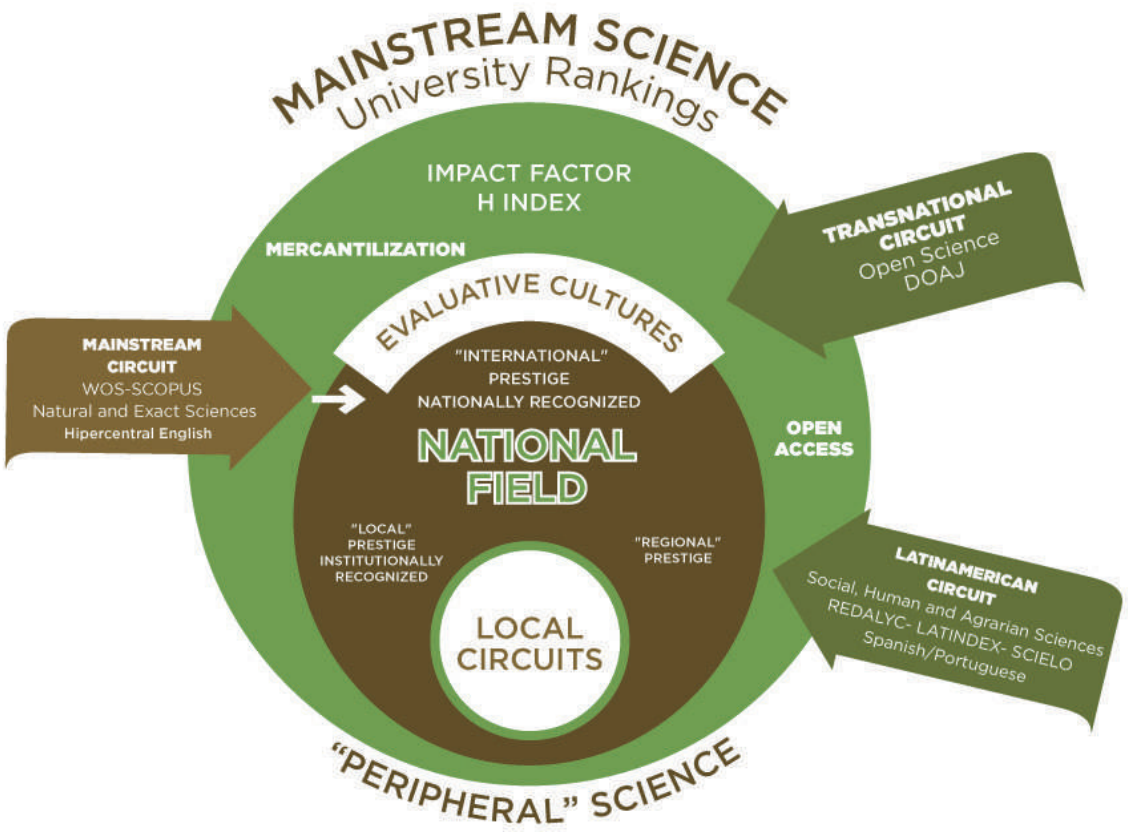
The case of China is interesting when analyzing the ways of integration to the World Academic System and the resilience of other worlds, other circuits. Quan et alia (2019) point out that China recently became the most important country in terms of scientific article output and that their efforts to effectively stimulate research and academic mobility have been fruitful. Both in production as in citation terms, that country has increased the number of its publications and its participation in the mainstream bases of international production. This boosted not only basic science but also technological development and an increase in patents. However, Tao (2020) remarks on a recent "nationalizing" movement which seeks a change in the assessment culture to re direct research in that country. This change bears a critical outlook on how Chinese institutions modelled their practices to gain a higher impact and how they pressured their researchers to publish more. The new trend reports that papers will be used as main assessment only for basic research and not towards technological development and applied research. As for basic researchers, only a set of representative productions will be used, thereby disregarding the impact factor. They will seek to ensure at least a third of these papers are published in Chine journals with an international circulation. Sivertsen and Zhang (2020) analyze the ongoing assessment reform in that country and remark on its aim to recover the local relevance of knowledge, although they point out to the need to have assessment tools in line with the new goals and national production comprehensive databases.

As we can observe, the circulation circuits are not independent from the evaluative policies or the reward system, which transit among autonomous and heteronomous criteria. This return in China to a conversation in national media and the abandonment of the stimulus to publish according to the impact factor implies an acknowledgement of the disregard the local and national has suffered against what is global or mainstream. Scientometrics has been a relevant tool in this sense; as a matter of fact, the national references in articles continue to be studied as an "over citation" bias (Khelfaoui, M., Larrègue, J., Larivière, V., & Gingras, Y., 2020), as if it were an act of endogamy *per se* to cite articles published in the author´s same country.

The "negotiation" that hinges between the local order and global standardization is different in terms of the relation with national scientific policies. As can be observed in Diagram 1, these dissimilar situations lead to diverse prestige scales: a) locally acknowledged institutional recognition, b) the regional prestige that results from the participation in the Latin American circuit and c) that "international" prestige much longed-for by researchers who take part in the mainstream circuit and who, however, generally tend to limit to a rather national legitimization (Beigel, 2019). At the same time, other hierarchies are involved in the prestige segmentation within a single country and even inside the institutions. We refer to the geographical inequalities and the gender asymmetries which are structural features affecting the building of academic careers and the relations of power in the institutions.

Ultimately, global interventions are not processed by each community or by individuals without mediations but rather depend on a series of local actions which work by refracting heteronomy or by undermining academic autonomy. A survey carried out by the European Association of Universities among over two hundred universities showed that the great majority of the institutions expressed they have sufficient autonomy to determine the academic assessment criteria but that, notwithstanding, they feel great pressure on the part of financing institutions and that this affects their assessment practices (Saenen, Morais, Gaillard & Borrell-Damián, 2019). In some Latin American counties, university autonomy continues to be a strong tradition, with visible institutional effects on financial autarchy. In other counties, these policies have focused their actions towards inserting their academic community through incentives to publish in the mainstream circuit. In these cases, "nationalist" resistances have been reduced to only a few institutions or disciplines while the competition for subsidies and grants is dominated by criteria and rankings deemed in line with the "world science" trends. Even in these contexts, some studies show that there is still a strong local vector of linguistic resistance that can be observed in the production of books (Hanafi, 2011; Ramos Zincke, 2014).

Diagram 1



Source: Beigel, F. (2019) "Circulation indicators: a multi-scalar perspective to measure the Latin American scientific and technological production" in Ciencia, Tecnología y Política, Año 2, N°3, p.12. Translated by the author.

Going back to the effects of "mainstream" vision on the local circuits; would it be correct to generically attribute those production forms to a congenital endogamy? Actually, all knowledge production institutions are spaces with local dynamics in the Roudometof sense (2019); that is to say, in terms of their social relations in one place. That localization is a construction, adaptation and negotiation with diverse circuits that affect each place. But, which institution, which researcher is more autonomous? Those who set their own research agenda and localizes their research to solve problems in their community? Those who dialogue with an international community and publish their research in indexed journals? The answers to this are not simple because there are different sides of autonomy involved: those pertaining to institutions, to individuals, to countries and to communities. On the other hand, autonomy and heteronomy co-habitate conflictively in the scientific arena and within the very institutions. The idea of "situated open science" is interesting because it takes part in the global science conversation but seeks to contribute towards a reappreciation of that which is local (Chan Ed., 2019).

Along this line, we can say that institutions have become multi- scalar spaces, both because of the varied spaces they take as the object of scientific production and because of the diverse circulation circuits they participate in. Far from having disappeared, national academic autonomy to determine scientific policies and assessment criteria appears to be navigating troubled waters, always driven by heteronomous meddling but without completely sinking (Beigel, 2019). Losego & Arvanitis (2008: 351) maintain that non- hegemonic countries can have greater maneuver margins to act on a national scale, define a local agenda and choose their counterparts in collaborations. This is expressed not only in scientific policies but also in the assessment policies which are adopted for higher education and the scientific research entities.

Although researchers are particularly bound to quickly respond to incentives or rewards, these gain a new significance as a result of the filter that institutions and assessment policies apply on exogenous criteria. This is the reason why at this level, there is a maneuver margin and feasible transformations will depend to great extent on the governments´ political decisions as well as those of university institutions regarding the use of their different degrees of autonomy. On the other hand, assessment cultures are marked by the *beliefs* of those who assess and are assessed, but also by the *resistances* which are observed in the analysis of the researchers´ curricula vitae. These are generally more diverse than what their own strategies pretend to show. This diversity takes place not only in social and human sciences. It can also be observed in the so-called "hard" sciences among the more academicist profiles and those who seek technological transfer.

Assessment policies and incentive systems in Latin America

Schimanski & Alperin (2018) analyzed the historic evolution of academic assessment in the admission / confirmation and promotion of faculty members in the United States and pointed out that it was in the 1980s when teaching and social service[3] ceased to be enough to confirm a position at University. At the beginning of the following decade, professors were greatly pressured to research and publish, which interfered with their ability to devote to teaching. In Canada, similar tensions were observed between teaching and research as a result of the growing emphasis on entering competitions on publication history. As long as the teaching was not "terrible", the key to entering was in research performance. It even resulted in many professors removing their service activities from their curriculums until they achieved tenure (Schimanski & Alperin, 2018).

Transformations in higher education in countries worldwide accompanied this trend. Altbach (2009) maintains that the faculty powers were also significantly eroded following the rise of administrative staff and their increasing influence on academic policy. The erosion of full-time positions and a tendency towards the decrease in salaries led professors into an escalating competition to reach the expected productivity of the institutions. These transformations in higher education are not unrelated to others which directly affected the scientific arena, defined in Bourdieu´s (2003) terms as a structured space of agents and institutions which compete to accumulate a specific type of symbolic capital, academic prestige. Gingras (2020) refers to three big changes: the revolution in telecommunications and the internet; the commercialization of the publication system and the assessment turn led by the New Knowledge Management and the Evaluative State currents. In their mutual interactions, these three phenomena have become a perfect storm of sorts which explains the changes observed in the scientific arena. When the paper in indexed journals went from being a knowledge unit to being a measurement unit used to assess people and institutions, not only did the behavior of the teaching staff change but also that of the journal editorial teams and of institution management.

Let us now analyze the relation between these transformations and the path undertaken by assessment policies in Latin America to observe their regional specificities and national diversity. The fundamental pivotal point which affected practically every country took place during the 1990s, in the context of the neoliberal adjustments which promoted privatization processes and market dynamics across different social life orders. The impact of higher education and research agencies was, however, differentiated, according to the history of each national space and the resistance / negotiation possibilities registered in the university world (Kreimer, 2011; Ortiz, 2009; Naidorf & Perrota, 2017; Beigel, 2015). The main application instrument of the turn towards the so-called "Evaluative State" (Neave, 1990) consisted in establishing external accreditation rules for universities. A heteronomous interference which to a great extent succeeded although with varying degrees in each country, according to the strength of university autonomy, the role played by Dean Councils, the importance of the student movement and the incidence of teacher unions.

3 The use of the term "social service" corresponds to what in Latin America is called university extension. Regarding the Latin American tradition of extension and its differences with technological transference, please refer to the document FOLEC "DIAGNOSIS AND PROPOSALS TOWARDS A REGIONAL INITIATIVE".

Along the same lines of what happened in other latitudes, quality assessment policies changed research practices and had effects on teaching. On the one hand, the assessment of research performance began to be directly associated with the obtention of awards or monetary rewards; secondly, these systems started to regulate admission and / or permanence, thus organizing professional segments with a different hierarchy; and, thirdly, access to a career in research became a guarantee of higher professional status and prestige (Araujo, 2003). The specific way in which each country implemented these incentives and the assessment system it employed shows different situations. The Argentine case is a good example of a limit case in which the negotiation between the local order and the global standards resulted in what Erreguerena (2017) calls "concerted heteronomy", that is to say, the acceptance of external assessment according to criteria shaped by university heads. During the 1990s, university deans went on to head the Secretariat of University Policies at the Ministry of Education. The power of the deans worked on a pendulum, between resistance and negotiation, which invalidated the transfer of power from the faculty to the administrators. As a result of this particular autonomic condition, Argentine state universities succeeded in creating a system towards the categorization of professors-researchers through an Incentive Program (PROINCE), which promoted research with a rather solidary budget. The assessment criteria of that program value not only the international publications but also the national ones and it grants a score to teaching activities, of an extension-transfer nature and of a management nature (Beigel y Bekerman Coords., 2019).

A different path was undertaken in this country by CONICET regarding scientific assessment, whereby for several years, international criteria was used for tenure competitions, annual reports and researchers´ promotion. A highly internationalized evaluative culture rules to the present day this entity where most disciplines classify journal articles based on their impact factor. It is worth noting, however, that social sciences and humanities have succeeded in building their own internationalization path through publishing in indexed journals included in the Latin American repositories and they use their own journal classification which does not include the impact factor (Beigel, 2017). The Núcleo Básico de Revistas Argentinas works at CONICET, which periodically assesses the journals that apply to it without establishing quartiles or classification hierarchies. However, participating in the Núcleo Básico does not grant these journals sufficient recognition to be considered first level in the journal classification used in assessment processes.

According to the studies available (Alperin & Rozemblum, 2017; Vasen, 2018) in Chile, Colombia and Mexico, it is possible to observe a consolidation of the mainstream model which has been promoted through salary incentive systems to guide researchers to publish in high impact journals. In Mexico, the Sistema Nacional de Investigadores (SNI) (*National Research System),* created in 1984, has the objective of directing the activity of those carrying out research in the public and private system, distributing an amount of money and a category, thus legitimizing a specific status. In 1990 in Venezuela, a program was put in place towards the promotion of scientific researchers and technological innovators, by means of a monthly grant based on the category obtained (Sarthou, 2013). In Colombia, a public university incentive system was set up which consists of granting an additional amount of money to the salary according to a score for each university professor based on a set of criteria such as university degrees, teaching category, qualified experience and academic productivity. Borja Bedoya & Insuasty Rodriguez (2019) state that this model seeks to adapt the country´s knowledge building processes to international logic and standards and, to that end, they use indicators created by the two large bibliometric companies, Wos and Scopus, thus encouraging the commercialization of knowledge production. The locally created system to classify Colombian journals, Publindex, went from criteria based on the quantity and typology of articles to criteria related to visibility and impact, which privileges the amount of journal citations, something which left a large number of journals outside the national classification system.

More recently, in 2007, Uruguay created the National Researchers System which is linked to the granting of economic incentives and a classification for researchers. In 2011, Paraguay implemented the National Program for the Incentive of Researchers. Both programs have in common the payment of individual monetary incentives for the carrying out of a number of activities and the presentation of certain credentials (Sarthou, 2016). Buendia et. alia (2017) analyze these stimulus programs based on bonus amounts which represent different payment formulas for merit / productivity. Further to this, they point out that although these policies seek to establish an assessment culture, what the different assessment programs result in is a bureaucratic structure devoted to curricular recount. While it does not lack some virtues, this result did not set up practices that would allow those assessed to have guidelines and feedback to improve their professional performance. A reward system was implemented for those who produced certain kind of products instead of an assessment that would guide them towards being better academics. This is why these programs appear to be more supervision and control mechanisms, based on

mutual distrust between government and institutions and between the institutions and their academics (Buendia et. alia, 2017). Along this same line, Piovani (2015) maintains that as assessment professionalizes, it acquires a bureaucratic dimension, almost a ritual. Consequently, as processes become more of a routine, the assessment objectives become blurry and gradually separate from the fundamental questions that guide them, as well as the principles which justify them from the political institutional point of view.

In short, research incentive systems have differed in terms of the national diversity of the region, science internationalization policies in each country and the ability of universities to adapt university policies to local needs[4]. In those countries who bear a weak autonomy tradition, actions are directed towards inserting the academic community in the mainstream circuit to improve performance in the rankings. Even in those contexts, it is possible to observe resistances of a local agenda led by researchers concerned with linking knowledge to social and productive needs. A large part of this production can be found in the university extension which is a substantial function at universities across the continent (See Document FOLEC "DIAGNOSIS AND PROPOSALS TOWARDS A REGIONAL INITIATIVE"). There is also an increase in the production of indexed journals in open access circuits, such as that in Latin America, which bear a professionalized academic quality and edition. Additionally, there are thousands of non- indexed journals which show there are many alternative dialogue and scientific communication circuits already working.

It should be noted that the distribution of prestige is not only determined, however, by assessment policies of academic globalization dynamics. Gender asymmetries play an important role by presenting barriers against the hierarchization of women and those who manifest sexual diversity. Almeida & Moschkovich (2015) point out, for example, that higher education has been an arena particularly bound to the insertion of women in the Brazilian job market as a result of a number of factors which grant advantages over other spaces of labor insertion. However, they remark on the decrease in female participation among teaching hierarchies and management positions. In spite of the steady growth of doctoral degrees and the incorporation of women and those declaring sexual diversity in the university research centers, they take a small participation in the higher hierarchies. These are structures which operate both on an international and the local level and can be observed across the Ibero-American region (Albornoz et. alia, 2018). Gender gaps also manifest horizontally through a reduced presence of women in certain scientific and / or technological disciplines, whereby labs and research teams have a very strong male majority (Universidad de Valencia, 2012; Thelwall, 2019; Sarthou 2019). Likewise, it should be mentioned that female researchers tend to be over-represented in base assessing committees, those who carry out most of the administrative work, while they are under-represented in the higher hierarchical decisive instances.

The Latin American and Caribbean circuit of scientific publications

While the scientific capital accumulation process evolved in the centers, driven by the impact factor and university rankings, other forms of communication and academic recognition circulated in Latin America, along a different path but with an equally dynamic impetus for internationalization.

This circuit appeared in the framework of a long-standing intellectual space, which was stimulated by the trend towards the typical regionalization of the second post-war period when, additionally, it received financial support from foreign public and private agencies (Beigel Ed. 2013). It is possible to point out three stages / layers in this regional circuit which developed on a vigorous cultural platform born, at least, two hundred years ago. A start date would probably take us to the "Letter to the American Spaniards", written by Juan Pablo Vizcardo y Guzmán and published in 1801, which represents a milestone in the pro-independent reflection as a common narrative. This construction of an identity evolved during the whole of the 19th century in the fertile soil that lies in the cross between press and literature when the intellectual and artistic arenas developed. Once into the 1920s, avant-garde publishing houses appeared, stimulated by the American University Reform movement. A budding publishing industry began to spread on a regional scale, the local perspectives on the western theories which strengthened

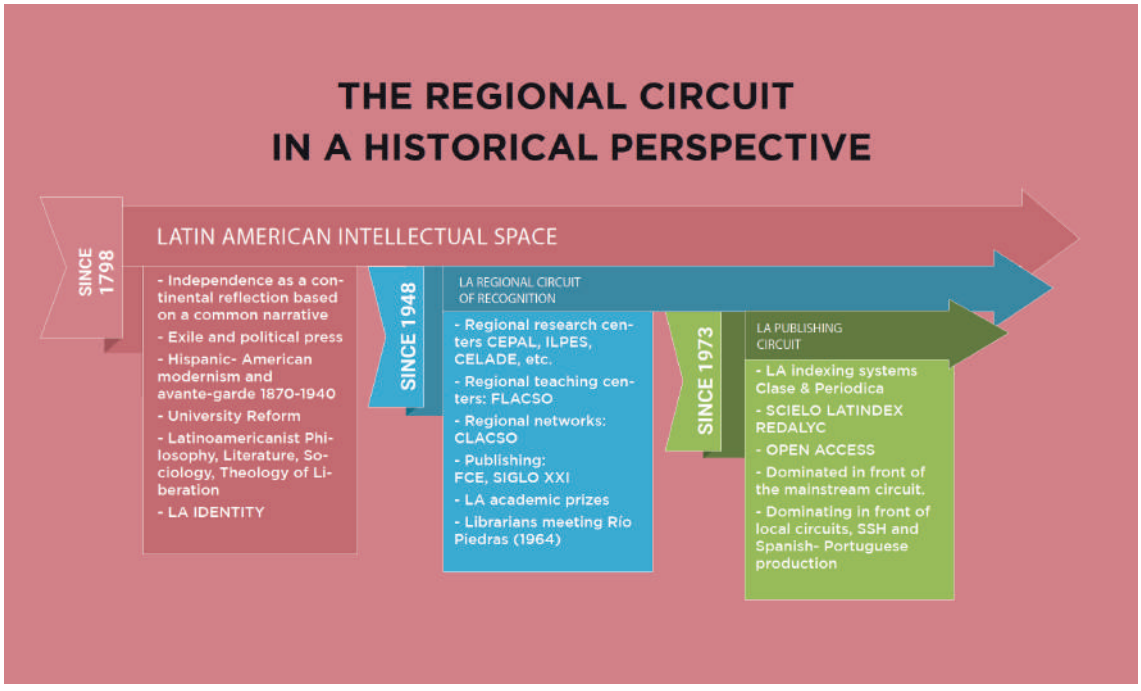
4 For a panorama on trends and limitations of the internationalization of higher education in Latin America and the Caribbean, please refer to the regional survey carried out by UNESCO-IESALC: Gacel-Ávila, J. & Rodríguez-Rodríguez, S. (2018) Internationalization of higher education in Latin America and the Caribbean. An Assessment. México: Universidad de Guadalajara, Benemérita Universidad Autónoma de Puebla, UNESCO-IESALC.

the new-born social and human sciences, accompanying the process of modernization and wide spread growth of universities. *Fondo de Cultura Económica, Siglo XXI* and other publishing houses came to consolidate this intellectual field during the specialization stage in the 1950s (Beigel, 2019).

The second stage was born with the appearance of the regional institutions and a highly trained academic diplomacy, recruited at centers such as CEPAL (1948), FLACSO (1957), CELADE (1957), DESAL (1960), ILPES (1961), ILADES (1965) and CLACSO (1967) which promoted the rise of specific forms of regional recognition and intra-regional mobility currents. The UNESCO national committees and librarians played a relevant role in the regional initiatives to create Documentation Centers, spread journals, produce lists of material and bibliographical reports which would stimulate the circulation of knowledge produced in the region. At an important regional meeting promoted by UNESCO in Puerto Rico in 1964, attendees analyzed the situation of Latin American journals, the necessary assessment methods to build a quality list of publications and the perspectives for regional journals through reports on some disciplines such as Agronomy, Biology, Physics, Mathematics, Geophysics, Engineering and Chemistry (Salatino, 2018). These initiatives show that the regional circuit was not exclusively supported by the social sciences. Quesada (2019) analyzes the relevance of agrarian sciences regional networks in the first half of the 20th century, related to the Pan-American interest and the implementation of agrarian programs in the 1940s in Mexico, Colombia, Venezuela, Ecuador and Chile. Abarzúa Cutroni (2017) gathers testimonies on the creation of the Regional Center for Mathematics in Buenos Aires in 1958.

These networks and institutions will serve as sediment for the third stage of the circuit which will materialize into a scientific communication ecosystem parallel to the mainstream circuit which was by then in full development. The first initiative in this direction appeared in Mexico and it involved the creation of their own indexing systems such as CLASE (1975) and PERIODICA (1978). However, it was, without a doubt, the 1990s that saw the expansion of the regional journal system thanks to the support of the Mexican government, through the creation of LATINDEX in 1994 as well as that of the Brazilian government through SciELO in 1998. Shortly after, REDALYC (2003) would be created and Latin America would consolidate as an open access avant-garde and science as a public good at an international level.

Diagram 2



Source: Beigel, F. (2019) "Circulation indicators: a multi-scalar perspective to measure the Latin American scientific and technological production" in Ciencia, Tecnología y Política, Año 2, N°3, p.11. Translated by the author.

A typical feature of this regional circuit is that it is the universities which are the publishing institutions of the scientific journals. The indexing systems were developed and continue to be managed by the academic community, mainly universities and public agencies. In contrast, the mainstream indexing systems were developed by the commercial sector which also co-opted the editing of journals from the academic sector. Vélez-Cuartas, Lucio-Arias & Leydesdorff (2016) showed that most of the Wos-Clarivate journal editing institutions come from commercial publishing houses while only 13.6% belong to journals edited by universities or professional associations. The opposite of this was observed in the case of SciELO, where 89.1% belonged to the journals edited by universities and associations. This feature of Latin American academic editing, along with the distinguished role played by librarians and experts from regional repositories and academic networks, especially the Consejo Latinoamericano de Ciencias Sociales (CLACSO) *(Latin American Council for Social Sciences),* played a central role in the development of quality scientific communication which went against the logic of "excellence" as proposed by the hegemonic bibliometric companies (Babini, 2011; Cetto & Alonso Eds., 2011; Vessuri, Guédon & Cetto, 2014).

In the opinion of Aguado *et al.* (2017) the commercial mainstream databases not only lack a sub-representation of the Latin American production – and specially of social sciences journals- but also contribute towards belittling it, which can be observed in the scientific policies of countries and institutions. But how did the progressive adoption of hegemonic assessment criteria and mainstream indicators in Latin American universities really impact this circuit? On the one hand, it affected its ability to confer prestige to assessments and that led to a decrease in interest of exact and natural sciences in publishing in the region. However, for social and human sciences, it continued to be a dominant circuit in Spanish and Portuguese production. This dual nature of the circuit (dominated in the face of mainstream but dominant towards the inner parts of the region and local languages) is visible when compared with the efficiency of these indexed journals in regional repositories as opposed to non-indexed journals (Beigel, 2014).

These regional repositories represent a huge assessed and published production corpus in Latin America within the context of an environment dominated by state universities and open access. SciELO, LATINDEX and REDALYC made numerous efforts to improve the web access to their indicators. With the support of UNESCO, the SciELO, Redalyc and CLACSO websites were able to grant better visibility to their indicators, and also carried out important studies on regional production (Alperin, Babini & Fischman, 2014). However, nowadays, production indicators are only possible for the two collections which offer information at the article level (SciELO and REDALYC) while LATINDEX is undergoing a re-cataloging process. Given this, there are still probably around 4.000 indexed journals whose collections with metadata are not available. There are no inter-operable platforms to measure this valuable assessed and published production in Latin America because the three repositories are not connected. There is no regional standardization of the authors´ institutional affiliations that would allow for the merge of databases and this has a direct impact on the ability of regional journals to provide alternative indicators to the institutional and individual accreditations.

Now, beyond the difficulties on the part of indexed Latin American journals to achieve the legitimization of the assessment processes and the large number of journals which are neither digitalized nor indexed, there is a another phenomenon of great incidence for social and human sciences: we refer to the publication of books which remain outside mainstream and regional databases. In this sense, there is much to be done in order to progress towards a regional infrastructure which is vital not only to give visibility to journal production but also to books. It would appear that the best solution in this sense it to create new national information systems capable of bringing together all the institutional repositories and researchers' full curricular information.

The specificity of production in social and human sciences

There are very few studies based on empirical studies with primary data obtained from curriculum but those existing in some countries of the region allow for the visualization of the diversity of circulation styles of social scientists. The most singular case is Argentina, which has very diverse publication styles and assessment cultures, to a great degree stimulated by university autonomy and other structural features of that scientific field (Gantman 2011, Beigel, 2017, Baranger & Niño, 2020). A study into the social and human researchers' universe at CONICET,

shows the existence of five different publication styles, with the orientation towards the publication in the Latin American arena the most extended one. This profile is not merely the circumstantial result of a selection of the most relevant publications made by the researchers. It is clear that this kind of publication in Ibero-American journals is a way of internationalization practically all researchers in these disciplines have resorted to, to a greater or smaller extent (Baranger and Beigel, 2020). In the case of Brazil, Mugianini *et al.* (2019) carried out a thorough analysis of the publications included in the curriculums of 260.663 researchers registered in the Lattes Platform and they verified that Brazilian journals represent a significant portion of these individuals´ articles across all scientific areas, thereby revealing the usefulness of national journals as publication vehicles for Brazilian authors. On the other hand, out of the total detected journals (23.000), 60% is not indexed either in SciELO or in Scopus or WoS. In the case of social and human sciences, we observe frequent publication in non- indexed journals and that internationalization beyond the Latin American and the Caribbean region exists though less frequently than the local vector.

It is now convenient to focus on the production of books to analyze the additional effects that the evaluation systems based on mainstream indicators have on these disciplines. On the one hand, these effects are related to their epistemological characteristics and the kind of object they study, which drives them towards monographic writing (Hicks, 2013). According to Gingras (2016), almost three quarters of the references contained in articles related to social disciplines and humanities refer to books and not journals. This proportion has been relatively stable for the last thirty years. Of course this phenomenon does not affect these disciplines equally since, for example, when it comes to Economics, the proportion of book references has regularly decreased in this period, going from 55% to 30%. In Chemistry and Physics, over 80% of the references mention articles. On the other hand, within social sciences, the choice of producing books or articles is also influenced by the training and hiring sites. In the United States, for example, sociologists at private universities, give preference to publishing books while those at public universities prefer publishing articles. Indeed, several studies on large production corpus across different parts of the non-English speaking world show that the publication of articles has grown as the format chosen by social scientists along with the trend towards writing in English (Gimenez-Toledo, Mañana-Rodríguez & Sivertsen, 2017; Beigel, 2017).

However, in social and human sciences, books do not appear to be disappearing as a means of communicating the results of research and neither is the use of local languages at the time of writing (Engels *et al.*, 2018). Sivertsen (2019) states that, in social sciences, books and articles can be equally needed at different times of a research. In addition to the international insertion of research, it is necessary to consider its social relevance for the culture and the society it is being produced for. One same project can contribute to both dimensions and require different formats to that end. Social and human sciences would probably lose their *raison d'être* and the support of their society if they were disconnected from the cultural and social context to communicate solely in international journals read by foreign peers. In practice, researchers in these disciplines do both things: they publish books and journals and in more than one language (Sivertsen, 2019). The obstacle in the valuation of these productions in the assessment process lies in that while indexed journals guarantee that contents have been reviewed by peers, academic books are only now starting to inform on the assessment process for their contents and an indexing system for academic books has not been developed.

These difficulties have been strongly expressed in the last few years and different sectors are gaining awareness of them, from social scientist, officials and decision makers who create scientific policies to large databases and commercial publishing houses who have started to face much criticism over the biased coverage of these disciplines. Still, the pending challenge is related to the acritically internationalized agendas: global dialogue is important towards basic quality research but interaction with society is equally important to achieve the ultimate end of knowledge production. This is why Sivertsen (2019) states that there is no reason to apply a general language and format hierarchy to the assessment of social and human sciences. All forms of publications and local languages are necessary to reach the fundamental purposes of scientific research.

In Latin America, there is a long-standing publishing tradition which has favored the publication of books and, consequently, the development of regional prestige manners driven by networks, regional centers, publishing houses such as CLACSO and other mentioned previously. Additionally, there are university publishing houses which play a significant role in the circulation of knowledge produced by the social and human sciences. Giménez Toledo & Córdoba Restrepo (2018) studied 541 publishing houses across different countries in the region and observed that, although the Open Access movement in Latin America has been very prominent as regards scientific journals, the adoption of open access is very different for books. In those university publishing houses, there are institutional boundaries as well as the legitimate concern of losing the sales income that supports their subsistence. Fur-

thermore, there is a culture which prevails among authors: they fear digitalization and open access will conspire against the intellectual property of their work. Undoubtedly university publishing houses are a central element to a regional and national policy of book production and for the visibilization of the research in local languages. Moreover, they will increasingly contribute to the assessment process as long as they inform on the peer-review process of the contents (Babini, 2018).

It is important to also mention here the pernicious effects of the demand for conventional publication to the artistic researchers. Some countries have managed to modify this practice and use specific assessment criteria but, in general, there is still an overriding lack of knowledge or appreciation. Metrics adapted to the production formats and styles of circulation in the artistic research can be used towards complementing the qualitative assessments based on peer reviews, but only if these assessment procedures properly reflect the specificity of these research objects will professors tend to contribute to the process (Giménez-Toledo, 2015). When, on the other hand, assessment is based on indicators built for other sciences which clash with the discipline practice or simply seek to control or stimulate productivity, resistances multiply and assessment processes lose sense and legitimacy.

To better know and value all forms of production of social sciences, one of the most important obstacles to overcome is that which we mentioned before: the lack of centralized and homogeneous national scientific information systems that make it possible to carry out studies with a bottom-up focus and the use of complete data on scientific production. This type of systems further allows the development of indicators for academic journals and books beyond the commercial databases, with the possibility of making the most of alternative and responsible metrics to accompany more qualitative assessment processes (Giménez-Toledo, 2018; Ochsner Hug & Galleron, 2017; Sivertsen & Larsen, 2012). In most of Latin American countries, we do not have an integrated system capable of representing the universe of curriculums with thorough lists of the researchers´ productions across all disciplines -LATTES in Brazil is the exception. Neither is there consolidated information on the use, citation and impact of these productions which can be lodged on diverse digital platforms; each one with their own indicators.

The social relevance of scientific research

The situation just described is related to the harmful effects of the world academic system on the appraisal of production formats typical of the social and human sciences, as well as the prejudices over the use of non-English languages to communicate scientific results. It should be noted that the recent debate on *Open Science* across the world has a positive effect on this situation. *Open Access* registers its first precedents in our region in the development of the journal repository movement that took place in the 1990s. Contrary to the "closed" publications systems from hegemonic countries as a result of costly subscriptions, our region presented a publishing system supported by universities and public agencies whose objective was to make science a common good. In the face of the "excellence" of the journals administered by commercial publishing bases, the Latin American repositories offered non-profit "high-quality" assessments. It was not only a difference in the form but a debate on the substance related to the very aim of science. The openness which carries the "open science" project is not only limited to favoring open access publication but to also widening the research and assessment process as well as the accessibility to citizen participation in science. Within that framework, there have been proposals for good practices in research assessment which include a varied range of new indicators, such as the interesting Open Science Career Assessment Matrix (European Commission, 2017). However, as Open Science ideas transform into concreate initiatives, it starts to face challenges which can delay or prevent their implementation, such as normative or institutional barriers and lack of infrastructure which can discourage its adoption (Fressoli and Arza, 2018).

In the last few years another connected debate has returned, this time concerning the usefulness of science and the question of whether public scientific investment truly brings about a concrete benefit towards development, productive expansion or life standard for the population. In short, it aims at determining if there is a return of such investment and how it should be measured (Piovani, 2019). This is a long-dated matter which accompanied the science institutionalization process, becoming the *alter ego* of the call for academic freedom to determine research agendas. It also unfolded as a tension within the extension function of universities in the region. According

to Versino, Guido & Di Bello (2012), the interpellations in favor of academic autonomy left behind the usefulness criterion and the belief in the idea of science as a neutral activity in search for true knowledge. Thus, the idea of utility progressively lost ground as the scientific *ethos* spread as the dominant *illusio* (Bourdieu, 1999) of an increasingly internationalized field. However, along with the advantages of this autonomist idea, an academicism was promoted which displaced the concern for the social relevance of scientific research away from the main path.

After having previously pointed out the negative effects of impact indicators, it is now time to concentrate on the alternatives to the academicism of those indicators. Schimanski & Alperin (2018) argue that there is great agreement on the harmful sides of quantitative assessment but that qualitative appraisals have not reached consensus yet as the best way to implement them. If the impact factor produces known distortions, the altmetrics which have been developed for a decade, also generate doubts regarding what they inform. For example, a low- quality publication can generate much noise in the networks observed by those new metrics while a high quality one may not attract any attention. The extension of the use of social networks such as Twitter, Mendeley, Researchgate, Academia and blogs, continue to be informal and mainly contribute to the updating of many academics who use them. But they have several limitations at the time of measuring the impact of a piece of research at an international research arena. Most of the critical studies point to the need to observe the *social impact* of the research and not only its *impact* on alternative networks within the scientific community.

Bornmann (2012) considers that many scientists see measurement of social impact as a threat to academic freedom and as a potential way to reduce funds to basic research thus depreciating "pure" scientific contributions. However, sometimes not even researchers know the social impact of their work because its inclusion in assessment is rather recent and there is scarce knowledge on this matter. This is why it is relevant to ask the question posed by Sivertsen and Meijer (2020): is "impact" really the correct term? Generally, when we speak of impact, we always refer to the search of evidence of an individual impact, focusing on one of the ends of interaction and demanding an extra effort on the part of researchers to show its value both to the authorities as to the financing agencies. Robinson-García, Repiso & Torres-Salinas (2018) state that assessment systems strive to rate research careers individually, ignoring the collaborative essence of research, inspired in structural distrust towards researchers and promoting lack of solidarity (Ràfols *et al.*, 2018). This generates serious methodological issues, processes which go on forever and the creation of significant bureaucratic burdens.

One of the main problems with assessment of the social relevance of scientific research lies in seeking "impact" through publications – though it might be considered practically its main obstacle. Sivertsen and Meijer (2020) argue that there is rarely a clear causal relation between a published research and a social impact. The production and the use of knowledge is a process of interaction and co-creation rather than a lineal process that has effects outside the research. Every social impact of a research is the result of a long period of time, with multiple intervening agents who can be located locally or internationally. Furthermore, impact is differentiated according to the fields and subfields of research because the social relations that are established between agents and institutions are different. It is worth noting in this sense that, although a wide range of the problems affecting society require the supplies and perspectives of social sciences, many governments and institutions around the world do not see such necessity. They consider it is sufficient with boosting disciplines which can result in an extraordinary discovery with a supposedly immediate impact on the health of the population, or a revolutionary technological device (Spaapen & Sivertsen, 2020).

The search for concrete impact, as a result of unexpected inventions or discoveries, appears to suppose these as a unidirectional result from the scientific world to society; that is why the researcher is required to manifest it in a published piece or a useful device. However, the social relevance of science does not generally occur by means of extraordinary events. If instead of using social *impact* it was replaced by social *interaction*, it would be possible to observe the relations from both sides of the bond based on the objectives and needs of the two parts (Sivertsen & Meijer, 2020). Taking both sides and sharing the responsibility for the relations between science and society could then extend the interactions. Along this line, the arts already take significant part in this type of social interactions and can offer new ways of coproducing knowledge.

The spread of the idea of "applied science" as a prerogative of the different branches of engineering, exact and natural sciences and the lack of knowledge regarding the potential that social and human sciences have to intervene in the problems of society, moved the Deans Council at the Schools of Social and Human Sciences in Argentina to express themselves in regard to the particularities of the social impact of these disciplines. Firstly,

they remarked that there can be, and generally is, asynchronism between the production of necessary knowledge towards public policies and the possibility of implementing those policies. As a matter of fact, an excellent and highly relevant research could encourage a focus against the public policy defined by a democratically elected government and that would deem it inapplicable in that context. This is the reason they propose the name "fundamental research *focused towards* use" for those knowledges potentially transferable into policy recommendations or community interventions (CODESOC, 2012). Indeed, there is a huge stock of information on the most diverse topics and a considerable production which is nourished on the flow which is many times contained within the academic frontiers. This is the result of the conjunction of lack of habit on the part of the scientific world in dialoguing with other areas of knowledge and audiences and the difficulty on the part of governmental management to make informed decisions.

Vélez Cuartas Coord. (2019) remarks that there are at least two problems when promoting and assessing interactions between the scientific production and society. The first one is of a structural nature since the indicators to measure scientific impact and its relation with the environment, in terms of creation and projection of its knowledge are insufficient. This situation results from the scarce offer of indicators to address the diversity of formats and products; the little information to specify the scope of the transfer and linking processes; the difficulty in understanding tangible data on the effects of the social appropriation and dissemination processes and the lack of assessment of the wide range of learning processes generated towards the inner part of groups. The second problem stems from the fact that the measurement models applied to date have specially focused on the individual efforts of the production of knowledge and not in the linking through research, teacher and extension, coordinated and overlapped between them and the surrounding.

One of the biggest bonds between university and society that has been scarcely explored, despite its potential to boost those interactions, can be found in "university extension", whose precedents appear at the end of the 19th century at European universities reflecting their responsibility to the societies they belonged to. This university function has a long-standing tradition in Latin America and its beginnings can be traced to the end of the 19th century where three type of extension activities/models appeared: cultural dissemination, the extension towards social change / development and the extension to make economic growth dynamic (Arrillaga et alia, 2015). According to Cano Menoni (2014) the original vocation was to "go to the people" which was manifested through the reformist movement of 1918. Years later, it was reformulated from the ideas of "liberation" and "cultural emancipation" in a criticism towards the philanthropic paternalism that inspired such idea of extension. During the 1990s, a new reformulation took place through the implantation of the neoliberal model and the external evaluation of the universities, reason for which this extension tradition lost ground when faced with the priority increasingly granted to technological transferences (Menoni, 2014).

There would then be a conflict at Latin American universities between two contrasting imaginaries: that formed by the reformist movement, with Córdoba at the head, against the neoliberal counter reform tendency at the end of the 20th century and the beginning of the 21st century. In the first of those imaginaries - linked to the senses that Ordorika (2013) attributes to the "State building University"- the Latin American extension traditions of a reformist profile historically rested during almost the whole of the 20th century. The second becomes, according to Cano Menoni (2017), the model of the *World Class University*, dependent of the rankings, where competition relations are forged based on the rationality of academic productivism and the understanding of university as the gear of the "economy of knowledge". In the first case, the extension is based and substantiated in solidarity, charity, democratization, development and / or social justice (to name but a few of the historical senses assigned to the extension, with greater or lower levels of politization according to the situation, protagonists and circumstances). In the second one, the extension - materialized in the link to the model of a company- is based and explained through reasons pertaining to competition, productivity and comparative advantages (Cano Menoni, 2017).

This narrative of the progression of the extension and its identification with the model of "entrepreneurial" university first and with academic capitalism afterwards, obstructs, however, the academicism that university ranking and bibliometrics promoted, as well as their particularities in the predominantly state-run higher education systems in Latin America. Far from having generalized such universities focused on technological transferences, the academization process appears to have stimulated the ivory towers and the distancing of universities from their social and productive surrounding (Versino, Guido and Di Bello, 2012). Transfers are not extended practices in the academic culture and the services, advisories or patents have not yet been relevant indicators in the assessment systems (Rikap and Naidorf, 2020). On the other hand, this opposition between an uninterested ecumenical ex-

tension and a privatized transferencism of a neoliberal inspiration, displaces an important extension current which in Latin America promoted university-society interactions linked to the resolution of national development problems (Erreguerena, 2020). We are talking about the *Escuela Latinoamericana de Pensamiento en Ciencia, Tecnología y Desarrollo (Latin American School of Thought in Science, Technology and Development),* which problematized the relations between scientific research and the national projects, through Jorge Sábato, Amílcar Herrera, Oscar Varsavsky, Natalio Botana and Máximo Halty, among others. This is where proposals such as the Sábato Triangle came from, to encourage a new relation between the scientific-technological system, the State and the productive sectors (Sábato and Botana, 1968). The term "transfer" which appears to refer to a unidirectional relation, this is, the contribution of knowledge from its generators (for example research centers and laboratories) *towards* the users, is currently under scrutiny, and increasingly focused on an interactive knowledge-building that can result from the coproductions between researchers and the representatives of the productive area (Britto and Lugones, 2020).

Beyond all this, university extension resisted neoliberal attacks and continued to develop both in its social dimension as in the artistic one in most of the Latin American universities. The polysemy of the very concept produces a great heterogeneity of activities that some universities consider extension; sometimes with a cultural dissemination profile, other times as technological transfer activities, socio-educational campaigns, popular education processes or student pre-professional practices, among others. Large congresses, regional groups and university extension networks verify, however, its dynamism (Erreguerena, 2020). This is how, in the mid-90s and as a result of the technological transfer model, the "critical extension" current came to be, initially based in Uruguay and currently developed across the region. Such current, highlighting the pedagogical contributions of extension activities, drives the transfer to "comprehensive university practices" which, involved in the resolution of relevant social problems and with the participation of actors, organizations and social movements, allow for the cohabitation and coordination of the three substantive functions of the university -teaching, research and extension (Tommasino and Stevenazzi, 2016). From this perspective, the extension seeks to be included within the "educational act" and offers great projects such as education in the context of imprisonment, socio-educational practices and programs of a territorial base, among others. Its results in terms of university social commitment and the interactions it has developed systematically through time are, however, have been invisibilized because this is a function which has a very little budget and is maintained by volunteers or militant collective groups.

University extension has a highly developed artistic dimension in most of the universities of the region. Some institutions have symphonic orchestras, ballets and a theatre which fulfil a singular role in the circulation of creative knowledge and, yet, have a little known or promoted social function. This is related to the difficulties previously mentioned to differentiate and measure the extension, linking or transfer activities which are a growing concern for universities and which constitute a potential privileged space to detect the social needs and carry out a knowledge dialogue between universities and society (Arrillaga Coord. 2015).

Final considerations

Boaventura de Souza Santos (2018) is right when stating that the tensions within the academic world carry low intensity when compared to the conflicts of the social groups that are direct victims of the coloniality of power and patriarchal violence. However, the COVID-19 pandemic has established that science has a fundamental role in the survival of the human species. Disputing the commercialization of the publishing system and its correlative in the assessment systems encourages the creation of new forms of coproduction and circulation of knowledge, all of which can contribute towards improving our existence.

In an academic world with an increasingly competitive dynamic, research evaluation has been restricted more and more to the assessment of journals. The trends analyzed show an evolution towards a model based on citation indicators solely taken from the mainstream circuit, thus acritically adopting the Clarivate or Scopus classifications. Professors were first pushed to concentrate their activity solely on researching, then to only communicate in the paper format. Later that production was "categorized" with the help of sophisticated bibliometrics, through the impact factor and journal rankings. The assessment of individuals and institutions grew to be more tied to publica-

tions and the direct effect of this transformation was a decrease in the value of peer review, replacing it for trust in the indexing of the journal where each article is published.

A collateral effect affected the "valuation" of national scientific journals. In spite of the increasing efforts on the part of these journals to comply with all indexing requirements which generally demand a minimum percentage of foreign editorial participation, a very small number of manuscripts arbitrated by authors of a foreign affiliation, another percentage of foreign authors and in some repositories even a minimum number of articles written in English, the national journals continue to be considered in our countries as endogamous in the face of national journals published in the central countries. This damages the social interactions of science with its local environment because scientists are punished for choosing a national means and their own language to communicate their results. We have seen how all this has specially affected the social sciences, the arts and humanities of non- hegemonic countries which would thus be doubly peripheral (Vasen & Lujano, 2017; Alperín & Rozemblum, 2017).

However, at the same time, we remark that the available empirical studies show the resilience of the Latin American journals in open access; also thousands of non-indexed journals which are still active and circulating locally; a profuse production of books and a dialogue between different forms of knowledge that takes place in the field of extension and university social commitment. A very valuable capital to work towards a focus of knowledge with social relevance and a contextualized renewal of the assessment systems. All this also reassesses which is and which should be the participation of citizens at large and social organizations in the establishment of priority topics and the national scientific agendas. And why not also the assessment of the projects to be financed and their results (Sivertsen & Meijer, 2020). If we expect to have democratic societies where the citizens and their representatives define the path to be undertaken, but where that path is implemented based on the knowledge of the society who chooses it and is its recipient, it is then crucial to analyze new ways of participative evaluation.

We have stated that peer review has been systematically relegated by quantification and bureaucratization. But evaluations cannot be tied exclusively to cognitive and extra-cognitive factors on the part of the expert peers, such as self-perception, disciplinary cultures and beliefs. There are several intermediate instances which create estimation schemes, incentives and rewards based on multiple combinations of global, national and local criteria. This is why the research assessment in Latin America and the Caribbean is not simply colonized by the "academic globalization": there are decisions, at different levels, which contribute to each diverse situation. The margin for maneuver offered by that set of possibilities carried by evaluation policies will advantageous if three aspects are acknowledged. Firstly, research assessments are carried out in a specific place and it is vital to know first-hand which set of knowledges and productions styles are typical of that space. Secondly, the categorization / classification scales continue to be the prerogative of national or institutional scientific policies which grant positions and promotions. An adequate dialogue between those local orders and the global standards can result in the production of criteria less dependent on "universalized" criteria. Thirdly, it is necessary to observe the resistances, which in their individual state can go unnoticed but when they become collective can point to paths to modify the evaluation procedures.

Finally, we should bear in mind that in the mainstream career led by its rate of exchange, the impact factor, all the pressures were focused on the academics (and the editors who are also researchers). Among them, the pressure to publish, the overburden of article assessment, projects, grants, admissions to a career or teaching competitions – tasks which are generally carried out as a public duty and are ad-honorem. Publishing houses have capitalized very well that voluntary work by creating bibliometric devices increasingly longed-for by the scientific community with the aim of accumulating the most cherished symbolic asset: "international" scientific prestige. It was then when the corset began to suffocate us. Overwhelmed by the demands, we lost more and more control of the evaluation process. If researchers and editors do not remove that corset to recover this publishing system currently co-opted by the publishing oligopolies, our universities will continue to contribute to the mainstream path and its elitist feature of science and higher education, by the way granting priority to the agendas imposed by others, deaf to the vital link between the production of knowledge and the needs of our communities.

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