

# Evolution of scientific publishing in social sciences journals and the emergence of Latin America as a characteristic ecosystem

*Evolución de la edición científica en revistas de Ciencias Sociales y determinación de Latinoamérica como ecosistema característico*

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## Abstract

The evolution of scientific publishing from its inception up to most recent changes is analyzed in order to identify trends and main issues. A specific analysis is performed of publications in social science journals in the Hispanic sphere and, more in depth, in Latin America. The characteristics and profiles that set this differentiated group apart are identified, describing its particular characteristics and issues, alongside the alternative proposals that are of great interest in the scientific community.

**Keywords:** Scientific publishing; journals; Social Sciences; Latin America.

## Resumen

Se analiza la evolución de la edición científica desde sus orígenes hasta los cambios más recientes, identificando tendencias y problemáticas principales. Se hace un análisis específico de la edición de revistas de Ciencias Sociales en el ámbito hispano y, más en profundidad, en Latinoamérica, identificando las características y perfiles que lo definen como un grupo diferenciado con características y problemáticas propias y con propuestas alternativas de gran interés.

**Palabras clave:** Edición científica; revistas; Ciencias Sociales; Latinoamérica.

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## Scientific communication

One of the most important milestones for humanity was the creation of writing. Its use enabled communication to be extended beyond the reach of the spoken word and beyond the moment at which things are stated. It permitted knowledge to be stored, transmitted and accumulated. The creation of writing was so important for humanity that it marked a before (*prehistory*) and after (*history*).

For centuries, knowledge was gathered in books which are scarce and expensive. Discovery of the printing press revolutionized information gathering. Little by little, *communication* processes (and not only those

that are *scientific*, although these are the processes that we consider here) have continued to change throughout time as they have been adapted to contemporary circumstances and taken advantage of the best available resources (Triggle & Triggle, 2017).

With the beginning of modern science during the Renaissance, the need was born to directly exchange information and knowledge between experts in different fields. This first phase is commonly known by the name *République des Lettres* (Sabbatini, 1999; Waquet, 1989), which is a play on words meaning *The Letter Republic* (in reference to both the letters that make up words and letters that contain words).

It was an informal, essentially epistolary, communication. This limited the reach of communications (very slow) and their dissemination (one letter for each interested individual). Soon, growth in both knowledge and the number of researchers turned this into an inefficient process.

## Scientific journals

The response came in 1665, during which the first two journals were conceived, *Le Journal des Savants* in France (in reality, a journal of updated information that also included a science section) and *Philosophical Transactions of the Royal Society* in London (in contrast this journal was essentially specialized for communicating scientific advances). As a print media, cost was reduced and reach was vastly increased. Thus, the era of scientific journals was born.

Journals proved to be a dynamic media. The best added to their ranks. When the number of submitted articles started to increase rapidly and become specialized, independent peer review was initiated (in 1752) in the aforementioned London review. Up until this point, an editorial committee had filtered out the articles submitted for publication.

During the 21<sup>st</sup> century, with the professionalization and expansion of science, commercial businesses (Taylor & Francis, Elsevier, Springer, etc.) came into the scientific ambit as publishers. The scale economy produced a sizeable growth in the field, with the period denominated *Big Science* emerging (Price, 1963). During the 20<sup>th</sup> century, the exponential growth of science continued (particularly represented in the growth of journals, see **Error! Reference source not found.**) and other two large publishers were established (Sage and Wiley-Blackwell). These two, alongside the three previously mentioned, formed the *big five* that controlled the scientific publishing oligopoly and was responsible for more than 50% of scientific production (Larivière, Haustein & Mongeon, 2015).

As we moved into the Millennium, scientific contributions emerged at the hands of technology. The first electronic journals emerged (Aliaga, 2002; Aliaga & Suárez Rodríguez, 2002; Rodríguez Gómez, 2005), in addition to other alternative, or complementary, means of communication (repositories, blogs, social networks, etc.). Given this impressive line of growth and information dissemination, Jinha calculated in 2010 that, since the creation of the first journals in 1665, *around about 50 million articles* had been published. This estimation refers exclusively to academic English-language journals. In 2018 there were 33,100 active journals which published more than three million articles this year (Johnson, Watkinson & Mabe, 2018). These same authors indicate that the rate of growth in the number of journals (thanks to the ease of technology but also its demand) has grown from a 3% annual rate at the beginning of the century to 5-6 % in the last decade. The CrossRef database distributes more than 97 million DOI every year (and this is not the only thing it does), of which around 73 million are assigned to documents published in a total of 60,000 journals. It has been calculated that, in 2014 (with continuing increasing trends), Google Scholar indexed between 100 and 160 million documents. These include journal articles but also books, final degree, Master's or PhD coursework, conference communications and other grey literature (Khabisa & Giles, 2014; Orduña-Malea et al., 2014).

In any case, irrespective of the indicator being considered, the quantity of research being published is vast and the effort to produce it is immense. This calls attention to the need to establish quality filters to apply to publications (in order to limit as much as possible this hyperinflation and select the most important and rigorous) and develop more sophisticated and effective information recovery systems.

Some of the improvements demanded by researchers in this sense include:

A) Access to information: For a long time, access to scientific information depended on the extent to which it was acquired by the institution at which researchers worked. This left out a huge number of researchers, particularly in countries with a weak economy. Amongst the developed alternatives, the following are found:

- a. The Open Access movement: There have been, and indeed still are, real confrontations between researchers and institutions, on the one hand, and large publishing multi-nationals, on the other. The latter seeks to defend an alternative model in which these companies have astronomical benefits, whilst the creators and consumers of scientific information have to pay more and more for it. At the moment, these exorbitant benefits have been managed to be limited or, at least, offered only in exchange for permitting access to increasing numbers of journals. In any case, companies have accepted that the Open Access movement is unstoppable, however, they have reacted and changed the approach of their business to “pay to publish”. This is something that has been institutionally promoted through public incentive policies for researchers.
- b. Online storage systems for academic material, from repositories (Arxiv.org was the pioneer but each university now have its own in an effort so atomized that it loses a lot of sense) to specialized academic networks such as *ResearchGate* or *Academia.edu*.
- c. Information recovery systems that teeter on the edge, probably more on the wrong side, of legality (Schi-Hub, Library Genesis). However, they give instant access to scientific information to an enormous number of researchers in all countries, many of whom would not have the opportunity to access this information if it were not for these media. Thus, this concerns a legal, ethical and economic debate (we need

companies that publish books and make this into an activity that enables them to subsist).

B) Integrated search systems: Mass publication of scientific publications will demand a huge energy and time cost in order to consult highly varied and ever-changing sources. Researchers do not tend to have these elements to spare. For this, the following alternatives have been developed with great success:

- a. Systems such as Google Scholar enable a huge quantity of information to be located and accessed online. Through this practice, this tool has been converted into an operative base, or a *Hub*, through which researchers can, and indeed tend to, initiate their information search (Blankstein & Wolff-Eisenberg, 2019).
- b. Agreements with the big publishers to maintain prices in Exchange for adding new titles. This has been denominated ‘*Big Deals*’ (Johnson, Watkinson & Mabe, 2018) and enables access to lots of information, capped prices (less than 1 \$ per article), and an integrated access system. Under these conditions, the number of articles accessed by researchers has shot up, reaching 2,500 million a year according to Johnson et al. (2018)
- c. Sales or shares agents (EBSCO, Cengage, ProQuest), through which libraries manage 80% (Johnson, Watkinson & Mabe, 2018) of their available material. These agents adapt themselves bit by bit in order to include a greater quantity of sources (with this favoring small- and medium-size publishers, giving them visibility). In an integrated way, these publishers are then added to interconnected search systems. This saves researchers effort and eases their search for relevant material that is related with their interests.

C) Larger space in which to publish:

Returning again to the revealing data produced by Johnson, Watkinson and Mabe (2018) that more than three million articles are published every year in specialized journals, only a tiny proportion of these are covered by WoS or Scopus index numbers. This cannot cover the entire spectrum of current research (in fact, they do not even strive to).

a. Greater number of journals: This has provoked a rapid increase in the number of journals to have emerged over the last decade, with this number having multiplied at a fast pace in the last 350 years.

b. Electronic journals: Ease of management, cost reduction, increased reach and other factors (Aliaga & Suárez Rodríguez, 2002) have driven the rise in electronic journals. This is the case, both for journals born out of this medium and those to have emerged since the old print model. A decade ago, Cox and Cox (2008) found that 96% of science, technology and medicine journals (the *hard sciences*, held within the *SCI*) and 87% of art, humanities and social sciences journals have now moved on to electronic

publishing. In relation to this greater availability and visibility of all online journals is due to the fact that articles that do not belong to elite journals are increasingly more “highly cited” and found in first quartiles (Acharya et al., 2014; Verstak et al., 2014). This poses the need to further develop article-level metrics, in place of journal-level metrics (Johnson, Watkinson & Mabe, 2018).

Precisely these changes and, more specifically, the adaptations made over the last decade by the leading companies in the creation of impact measurement for scientific publications (mainly, Clarivate through WoS and Elsevier through Scopus), should lead us to reflect on the evaluation systems and reward systems established by our national RDI systems.

Firstly, it should be borne in mind that inclusion within these indices is often an issue that is more closely related to the commercial policies of the companies involved in this scientific act and, thus, it is not necessarily synonymous with “quality”. The data presented in the following Table cannot be explained in scientific terms or in terms pertaining to improvements in produced research.

Table 1. Rate of growth of journals included in Web of Science between 2005 and 2010, according to country

Country	Coverage increase
Spain	2.600 %
Brazil	767 %
Chile	550 %
Croatia	550 %
Turkey	550 %
South Africa	475 %
Italy	400 %
South Korea	367 %
Australia	359 %
France	72 %

Source: Aliaga, Gutierrez-Braojos & Fernández Cano (2018),  
Calculated from data provided by Tesla (2011)

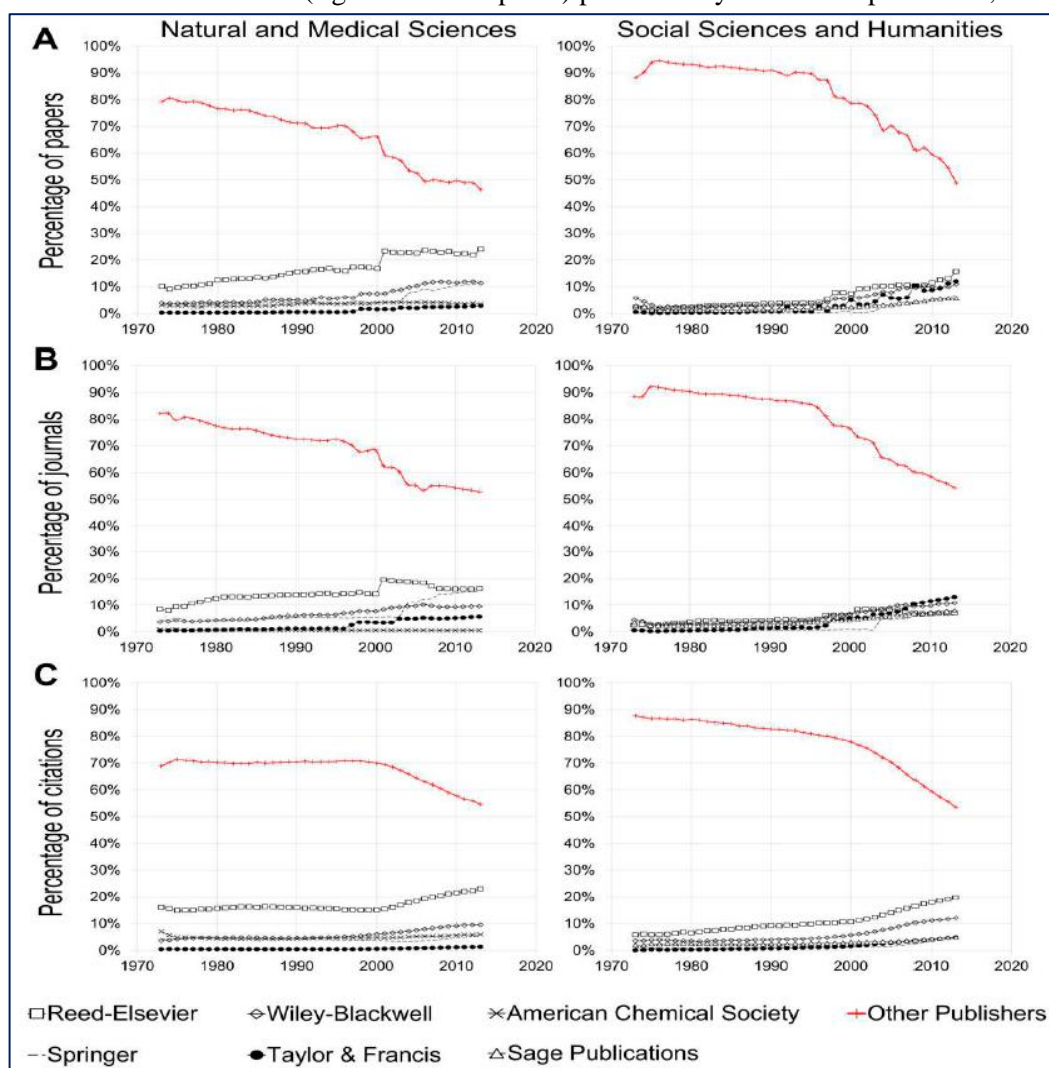
Secondly, it is evident that not all journals have the same possibility for inclusion within

these selective indices. It can be seen that editorial organizational processes, including

even the capacity of the publisher to exert pressure or their economic and individual capacity, puts small publishers at a disadvantage. This is independent of content quality or the demands they outline for publishing. In this way, Larivière, Haustein and Mongeon (2015) indicated that belonging to the *Big Five* oligopoly favored inclusion within selective indices, with these having a monopoly over more than 50% of included journals. In any case, we should not lose sight

of reality. With the enormous (and growing) rate at which a large number of scientific journals emerged, the weight of the Big Five has decreased over time. This is not only with respect to the number of journals or articles but also, and this is even more important, with respect to the number of citations. This indicates that an increasingly more substantial proportion of scientific literature of greatest interest is published outside of this small number of commercial enterprises.

Figure 1. Percentage of research works pertaining to natural and medical sciences (left hand-side panel), and social sciences and humanities (right hand-side panel) published by the 5 main publishers, 1973–2013



Source: Larivière et al. (2015)

Finally, in connection with the academic capacity for self-regulation within certain limits, we do not wish to neglect the movements organized by Academia. These movements strive to limit the excesses brought

about by the decisions of some scientific policy makers. Concretely, in the context of using evaluation systems which are excessively based on quantification systems controlled by private companies who have been shown to put

their own commercial interests before scientific criteria. Further, these decisions regarding institutional evaluation and personal evaluations of researchers, have strengthened the need to publish in journals. This is due to the availability of simple and external quantitative indicators (impact factors) which are, presumably, based on transparent estimation procedures.

Prioritizing the use of diverse impact factors, despite having some advantages, also presents no small number of challenges. Amongst these are no less than cultural, geographic and linguistic biases. Another of these challenges is often referred to as *Campbell's Law* (1979). This indicates that when a determined score or quantitative marker is converted into the desired outcome of a process, it loses its geometric value as an indicator and distorts the process. Along the same lines, *Goodhart's Law* (1975) indicates that "when a measure is converted into a target, it ceases to be a good measure". Moreover, the search for impact or publication factors in journals that occupy determined positions in journal impact quartiles has led to dishonest practice and difficult to understand interpretations.

In this sense, diverse initiatives have emerged at a global level which seek to reframe the limits of these quantitative approaches. These are mainly based on impact indicators of publications. Amongst these initiatives, we would like to highlight two specifically here. The first of these is the *San Francisco Declaration on Research Assessment (DORA)* (Cagan, 2013). The second initiative of interest is the *Leiden Manifesto for Research Metrics* (Hicks et al., 2015).

All of these recommendations have chipped away to the point of impacting upon the modification of diverse national research evaluation systems. A paradigmatic example comes from the system employed in the United Kingdom, denominated the *Research Excellence Framework*. This explicitly determines that quantitative bibliometric indicators, data regarding citations and categorizations (those famous quartiles)

should be excluded from the evaluative processes of journals (Giménez-Toledo, 2015).

## Social science journals

Within scientific journals, those dedicated to social sciences present differential profiles and habits with respect to other disciplines. They find themselves halfway between the practices of hard science journals and those of humanities.

A first distinctive characteristic of social sciences and, therefore, of the journals relevant to this field, pertains to its study object. Whilst the *natural sciences* take on universal topics, in other words, topics of common interest to everybody (the star, diseases, laws of physics), the object of study in social sciences tends to be specific to a concrete society. As with all generalizations, this should be fleshed out. There are ambits within social sciences (for example, research methodology or comparative aspects, without going further) that concern us all, whilst there are others that are much more specific, in other words, much more closely linked to the setting in which they were produced (and different from other settings, other circumstances). Aspects such as history, social relationships within a determined community, the particular history of a specific place, application of an educational law in a territory, etc... are all themes that involve a much more restricted target public than that of the natural sciences. The latter, given its nature, involves everybody. This, in no way, means to say that a global aspect does not exist in various branches of social sciences but that many have a strictly local aim. For this reason, they cannot hope to achieve the same extent of dissemination or, in other words, the same impact. Thus, social sciences, together with journals as their main tools for dissemination, have an extraordinarily complex and unique challenge. This challenge is to be universally visible whilst also being locally involved. In other words, to achieve a good level of external citations (necessary to be in positions that bring official and social recognition, both for the journal and its authors) without sacrificing

the commitment to develop at a regional or local level in order to achieve this (Collazo-Reyes et al. 2017).

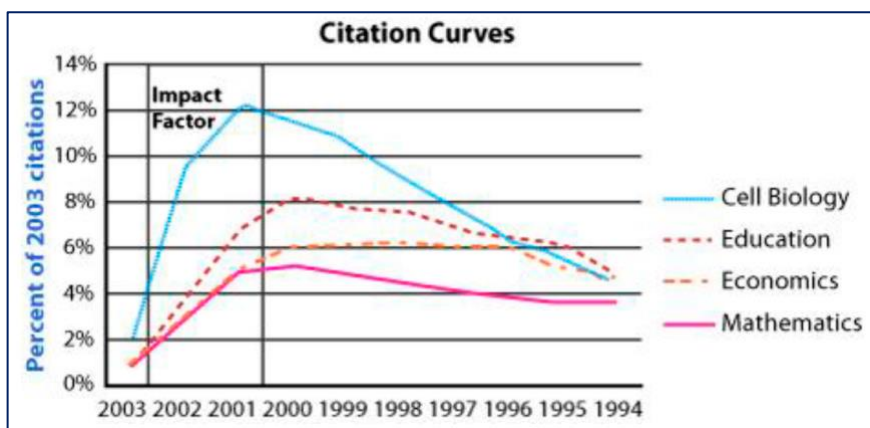
The social sciences in general (although there are obviously many differences between the different disciplines they integrate; Ainsworth & Rusell, 2018) differ in many other ways from the natural sciences:

- The social sciences receive a far lower level of funding, with this translating into very different systems for the funding of journals. According to the study conducted by Rodríguez-Yunta and Giménez-Toledo (2013), 42% of Spanish social science journals are published by universities, to which we can add a further 23% that are published by scientific associations. In the case of Spanish science and technology journals the opposite is seen, with 17% published by universities and 44% by associations. The latter is much more prominent in this field due to business grants.
- Publication, Reading and citation habits are very different. Social sciences journals included in JCR publish an average of 51 articles each year. In contrast, science and

technology journals, which have greater financial backing and larger audiences, publish an average of 160 articles a year (Sparks, 2005, cited in Johnson, Watkinson & Mabe, 2018). According to this same source, social sciences researchers produce around 5 articles every three months, whilst those from sciences, biomedicine and engineering publish 7.5 in the same period (partly because publications are distributed in different proportions across books and, partly, because co-authorship is more prominent in the natural sciences which means they are more present in a larger variety of products). In another extreme, humanities researchers produce less than one article a year and articles tend to have a single author. Finally, natural science authors read many more journal articles than social science researchers. Again, this is due to the different weight given to communication through books in the different disciplines (Johnson, Watkinson & Mabe, 2018).

- Citation time-curves are much longer. In other words, data becomes obsolete after a much longer time period (Figure 2).

Figure 2. Citation curve



Source: de la Peña (2011)

- The atomization of initiatives gives rise to a disproportionate number of journals with respect to other areas. However, we must bear in mind that some of these cover highly

specific topics or approaches (regional or local). This does not have to be a problem in itself, unless proposed objectives consist only of achieving high levels impact and

high global classifications. In order to give an example of this, Basque educational academic journals exist which could undoubtedly serve a justifiable purpose with regards to their aim and the mission statements laid out by a university or a professional or scientific society. It is also evident that the dissemination and impact of this type of journal would be limited, precisely by the size of the societal demographic it strives to serve.

- The protection and development of diverse languages: Whilst there is a general agreement that English is the *lingua franca* for natural sciences communications, this is far from being accepted in the social sciences ambit. In the social sciences, therefore, local languages continue to be used as the best way to access the population on which the research is grounded. The local language is often an instrument for achieving greater *social impact* instead of greater *academic impact* (Aliaga, Gutierrez-Brarajos & Fernández-Cano, 2018). Countries with a strong research tradition such as France or Italy refuse to turn away from divulging their research in their own language. The same can be seen in other regions of the world, where there have been real conflicts between social administrations and researchers (Chou, 2014; Ishikawa, 2014). In the case of Spanish, the second most spoken language in the world after Chinese with more than 500 million speakers, dissemination potential due to its use is difficult to compare with other cases. It is true that opting for local languages, without opening up to the outside world, carries with it risks that are not always appropriately controlled. One of these is that of endogamy. This refers to the risk that pressure from small groups, who in a more open context would not have any influence capability, can influence publishing or institutional decisions and procedures. In this way, they can affect product quality. In this sense, Giménez-Toledo (2014) found that only half (56%) of Spanish social

sciences journals apply peer review and barely two-thirds (62%) of these tend to employ a double blinded review system.

## Hispanic CCSS journals

Communication, the exchange of ideas and knowledge, opening up presented information and, in this way, opening it up to criticism, are all integral to science and its subsequent success. Thus, communicating (from the Latin *communicare* “to make common”) is a social tool that shares advances or proposals, such as how to improve knowledge, with an entire community. In fact, communication forms an integral part of the entire scientific research process. Research is not finished until this knowledge is shared with others. Hispanic social science journals (including Spanish American journals as a principal component but also including their area of influence – Latin America- and Spain) have been shown to be a scientific ecosystem with an identity of its own and certain unique characteristics which give it a particular coherence or interest.

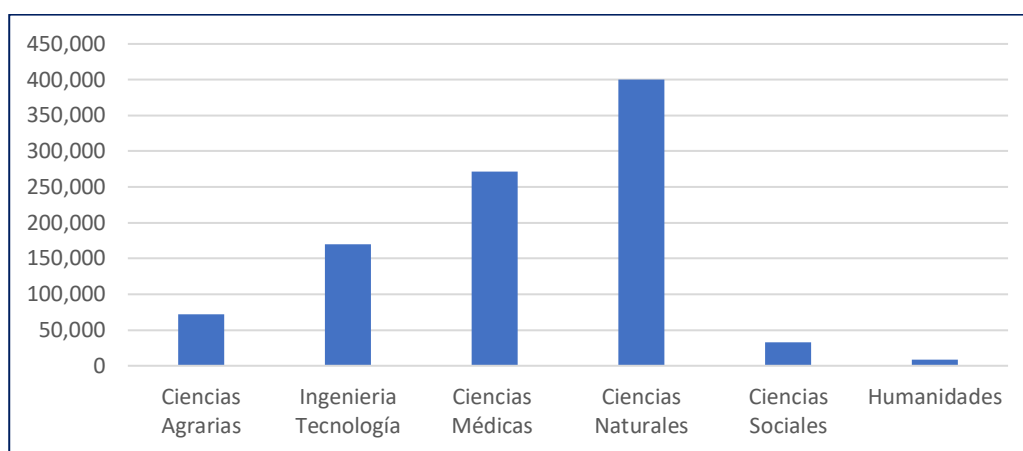
Language is the first integrative element. All Spanish American countries share a common language through which they communicate. This enables both a fluid communication with readers and leads to a potentially huge demand. This enables collaboration and debate. Further, language is just a part of this shared culture which also includes a legislative and legal tradition based on the Rule of Law inherited from Spain. There is a strong influence of European culture, which is combined with other sources (indigenous, often African, etc.). There are economic, social and cultural aspects that have kept us from being at the forefront of countries (economically, socially, politically, etc.) for a long time and lead us to pose common questions. In other words, a concept exists of *community* with strong shared elements. Many of these elements are also shared with Brazil (economic, culture of origin, traditions, religion...). This has produced a wider community, which has been attributed the name Latin America and offers a huge social framework of more than 600 million individuals.



Turning our attention to Latin American social science journals, all share the same first characteristic element: the Spanish language. Despite being the second most spoken language in the world (Maceiras 2019), this language is under-represented in the main international databases. Further, it is through these databases that the impact indices that determined the supposed quality and global impact of the research are elaborated in our

ambit. This will have strong institutional and personal consequences. As indicated by Giménez-Toledo (2015), the perspective given by Clarivate and Elsevier databases, despite having been nuanced in recent years, presents a strong anglophile bias (putting Hispanic or Lusophone journals at a disadvantage). Consequently, it does not adequately cover or evaluate the fields of humanities and social sciences. This is a double disadvantage.

Figure 3. Articles from Latin American and the Caribbean, according to main WoS areas (2003-2014)



Source: developed by the authors using data provided by Santin & Caregnato (2019)

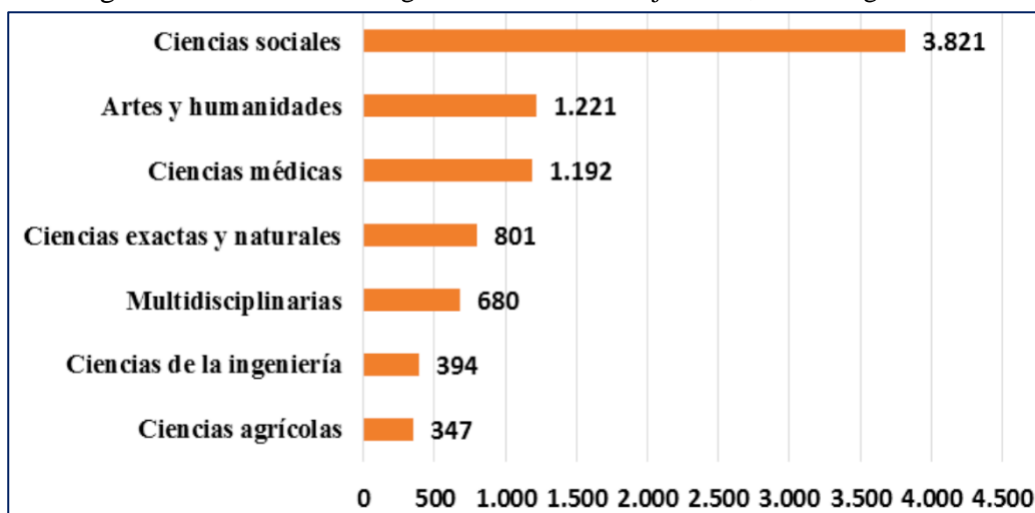
Another characteristic inherent to Latin American research is the scarcity of financial resources to fuel further investigation. Latin America and the Caribbean (LA&C) have invested around 0.60% of their GDP in recent years on RDI (RICYT, 2018). This is a miniscule amount, although it does constitute an advance with regards to what occurred just over a decade ago. Then, Velho (2004) found an average of 0.57% for the region, although there were notable differences between countries in both investment and the products being focused on (Santin & Caregnato, 2019). When we put these rates into context it shows a huge lack of investment. Indeed, the global average is 2.15%, whilst OECD countries invest an average of 2.5% of the GDP in RDI. Nonetheless, notable regional diversity should be noted: Brazil alone (1.27), Argentina (0.59) Costa Rica (0.58) and Mexico (0.57), with these proportions being close to 50% of the global average.

Latin American journals have certain characteristics that make them unique. The first is their great atomization and abundance. UNESCO (2015) estimates that the region contributes 3.7% of the entire world's researchers and 5% of global publications. Many of these are shared between thousands of journals that are of local or regional interest, as opposed to those connected to large global indices. This turns it into a peripheral science (Guédon, 2011), consequently with low levels of international visibility (Collazo-Reyes, 2014). Although some changes are slowly taking place (Satin, 2019), researchers continue to demonstrate clear preferences for publishing in regional or national journals (Glänzel, Leta & Thijs, 2006; Leta, 2011).

The second is that they concentrate a disproportionately high amount of their attention on the social sciences ambit. This is probably because it is an ambit that is

ingrained within every community and it is not easy to find external means to publish research.

Figure 4. Distribution of digital Latin American journals, according to ambit



Source: Alonso Gamboa (2017), elaborated from Latindex data

The large majority of journals are run by not-for-profit institutions (68% according to Latindex data; Alperín & Fischman, 2015), whilst only 8 % are in hands of commercial businesses (this percentage drops drastically when we consider those specifically relating to social sciences). Having been left practically outside of the commercial model (probably due to the economic weakness of the market), the *Open Access* movement has become more developed in this region of the world. This is especially the case in the ambit of social sciences. Miguel et al. (2011) estimated that 73.9% of journals in Latin America are Open Access, relative to 6.9% in Europe and only 4.9% in North America. This is due to commitment of the region to this new publication model but also, it should be recognized, lack of commercial interest to a large extent in the region's publications. This last fact is translated into a lack of adequate funding for publishing initiatives. In Mexico, Alonso Gamboa and Reyna, (2016) found that 24% of online journals created in the 21st century failed to last four years in circulation.

Databases produced by Clarivate and Elsevier (to a somewhat lesser extent in the case of the Dutch database) focus on that which is denominated as *mainstream* (also considered

to be that which is accepted by the majority) science (Cabrera-Flores, Luna-Serrano & Vidauri, 2014). This, intuitively, excludes “minority” topics or languages. This lands us with the doubt about whether it makes sense in some disciplines of social sciences, which must have different communities and societies as their object of study (which may be minority and seem irrelevant to individuals from other cultures), to establish a “mainstream” to which relevant research directs the flow of its efforts (Aliaga, Gutierrez-Braojos & Fernández-Cano, 2018).

As indicated by Collazo-Reyes (2014) and Ainsworth and Rusell, (2018), it is true that Latin American journals have recently experienced enormous growth with regards to their presence in the global reference database JCR, having moved from 69 in 2006 to 248 in 2009. Nonetheless, this change is not due to dramatic mutations in either the research or publication systems within these countries, but to business decisions that seek to strengthen markets previously considered to be marginal and, in this way, counteract the growth of other competing commercial companies such as Scopus (Aliaga, Gutiérrez-Braojos, & Fernández-Cano, 2018). In another sense, growth in received citations is slower than

growth in scientific production. This is not a good outcome with regards to the visibility or implications of Latin American research in relation to production (RICYT, 2017; Santin & Caregnato, 2019; UNESCO, 2015).

Latin American researchers of social science have a long history of engagement with their communities and societies. This engagement is reflected, for example, in the fact that their published works are dominated by local themes of relevance to their very own communities (how else could it be? They are professionals of SOCIAL sciences). This is to such an extent that even those researchers who finally manage to publish to the outside world, via global ‘mainstream’ journals, focus to a large extent on purely local themes (Ainsworth & Rusell, 2018; Miguel, González, & Chichilla-Rodríguez, 2015).

Latin American researchers and the journals that have been conceived alongside them as their natural means of expression and communication, have a hugely difficult mission in front of them. They must strike the almost impossible balance between finding ways of enabling them to marry their engagement with their local or regional environment and their own society, whilst also achieving the highest possible levels of global impact. Effectively, importing models (from other types of societies, principally from those that are most economically advanced and anglophile but, also from other types of disciplines of natural sciences) which are of dubious social interest. National evaluation systems have established the use of global indicators as an almost absolute priority. This has mainly been determined by two private companies which are driven by profit and not by the production of scientific knowledge. This, therefore, leads to the paradox in which governments, via legislators, drive a type of research that can be disseminated in journals of interest to other cultural and social spheres, yet hardly incentivizes research that is more locally specific. This is despite the fact that such research can also be (with appropriate control and criteria) of great quality (why not?) and, of course, as or even more productive

socially. Further, the fact that policymakers prioritize *academic impact* above *social impact* is not appropriately justified, especially given that they are not in any way incompatible. In any case, targeting social improvement could be and should be placed before international academic prestige. Data presented by Marin, Petralia and Stubrin (2015) indicate that research published in journals produced in Latin America sometimes have significant impact on public policy in some countries. However, this type of impact is yet to be considered by research evaluation systems (Alperín & Fischman, 2015). In Spain, a first and timid step was made in this direction in 2018 following the introduction of an academic recognition award. Known as a ‘*sexenio*’ due to the fact it considers six-year periods (up until now reserved for recognition associated with the rankings pertaining to the media through which researchers have published), this award is given for the *transfer* of accumulated knowledge to the society directly served by researchers.

Thus, precisely these types of institutional research evaluation policies implanted in the region disincentivize publication in journals which do not go with “mainstream” science. In other words, journals that do not go with what has been established by societies inherent to north anglophiles (Santin & Caregnato, 2019). It is true that low-quality publications, without external control, do not have real implications for either science or for the communities in which they produce their work. However, it is entirely unfounded and socially negative to identify low-quality science based on little other than the fact it produced local or regional publications (Chavarro, 2016). The task, therefore, of striking a difficult balance between “being globally visible, whilst remaining locally productive” (Collazo-Reyes et al. 2017).

In fact, it should be borne in mind, as indicated by Alperín and Fischman (2015), that a significant part of the best research conducted in Latin American countries is published in international mainstream journals, generally in English, due to

institutional reward policies. Given the principal characteristics of journals included in JCR or Scopus it is also highly probable that these journals will not be Open Access. Thus, the larger the desired impact factor, the more difficult it is likely to be to access research outcomes (in terms of economic cost, aside from linguistic barriers) as many libraries and universities cannot afford such outlays. As a result, a substantial amount of the best Latin American research from the social sciences (and from other ambits, although this is the field that is of current interest), which is often paid for with public funds, ends up being inaccessible to a large section of the local research community. That is unless a greater economic investment is made to give access to this aforementioned information.

We cannot resist relaying the following interpretation given by one of the main agents to have contributed to improvements in the publishing and dissemination of Latin American journals (Redalyc, 2018). This interpretation relates to the process of implanting evaluation criteria, particularly within the social sciences and is presented here:

- A. Globalization meant that predominant models were imposed, generalized and considered to be correct, appropriate and shared by all. First came internationalization and, with it, indicators, dissemination systems and databases (ISI), whilst the contexts, system conditions, and local, national and regional needs were not imported. The means was converted into the end. The south was suddenly met with global journals, which were largely unknown and, as a result, consulted little -only a tiny elite participated in them-, but now they had to read them and, principally, publish in them in order to participate in the dialogue. This took place without differentiation according to discipline and imposed the condition of having to pay for access.
- B. The legitimization of databases was followed by the legitimization of diverse

bibliometric indicators (FI-SJR-H), with all of these being based on citations.

- C. By one way or another, it was concluded that only that which was included in “mainstream” science databased was worthwhile and important.
- D. The most drastic change, with consequences yet to be seen and analyzed, is that the products of research stopped being significant as a result of their characteristics (objectives, quality, links with national and local needs, etc), essential characteristics of the processes stopped being important -in some countries and main universities cases were seen in which they were no longer even registered or mentioned-, the only thing that mattered was whether it had a ‘mainstream’ presence (WoS-Scopus), its position in the nucleus given by FI-SJR-H and received citations.
- E. National journal indices changed their parameters to be in line with “mainstream” ones and values or positions were classified, integrated and assigned to journals based on whether or not they were ‘mainstream’. A consequence of this is that hundreds of journals from some countries left national index registers.
- F. Regional systems and institutional experiences were no longer valuable and important to evaluation processes.
- G. The greatest paradox could be observed when journals were not considered to be of good quality, unless they were included in WoS or Scopus. Journals maintained the same editorial processes, rejection rates and international standing. They retained the same characteristics but quality was only recognized when they were included in the “mainstream”.
- H. Changes even reached academic’ resúms. It was possible to record all of their activity but they had greater weight, or were only considered, when they were in the “mainstream”.

- I. A form of cognitive dissonance emerged between academics and publishers. On the one hand, they criticized evaluation processes. On the other hand, they felt that their work or their journal was of greater value or better quality when it had an important bibliometric indicator or if it had more citations than another colleague or another journal. Essentially, because it was defined by the “mainstream”.
- J. Universities were not exempt. Rankings and table standings became daily practice and the task emerged of following-up on the standing achieved by a given institution. It didn't take long to realize that, when research integration, funding and promotion parameters, etc., were modified, their position would improve (standing or ranking position became the endpoint). Once again, the means became the end.
- K. Publishing monopolies started to buy up and control the science circuit, scientific networks, altmetrics, e-print systems, etc., with the aim of moving evaluation models from the “mainstream” into Open Access processes, repositories and CRIS.

We are facing a difficult and complex time which allows us to confirm, almost without doubt, that given present evaluation models and irrespective of university, country, discipline or regional setting, Open Access does not have a future. At best, it will be a system that benefits users (no small feat) but at financial cost and after relinquishing control over communication processes (not a minor thing). This would create a context that will widen the digital gap and end up bankrupting open access objectives and increasing cognitive dependence.

This concerns a fragmented and partial vision, although it clearly exemplifies feelings of a good part of the Latin American academic community (and others). This community feels the giant impulse that could have led evaluation systems to target objectives that lack social relevance and are economically

highly expensive, condemning them to be a *peripheral science*.

This type of standpoint condemns journals and Latin American social sciences research to be permanently relegated to second place. It leads them to import distant models instead of striving to improve systems of scientific communication and research (and many things have been done in this sense over recent decades). According to the analogy shared by Alperín and Fischman, (2015), this leads us to Zeno's paradox of Achilles and the tortoise which considers the impossibility of catching up with those in front. Basing this on a real-life situation, that which takes the lead is Achilles, being much more powerful thanks to the resources available to it. That or those who chase (let's say) behind, for this very same reason, are the tortoises, advancing much slower as is necessary. The solution is found by thinking about where we want to get to. We must consider whether the route taken by Achilles is the same one we wish to follow, even if it is far, or whether we should set new goals that are more appropriate to our aims and abilities.

In any case, the short- and medium-term, the strategy implies an increase in the global visibility of Latin American research. As a tactic to achieve this strategy, certain Latin American journals (mainly from universities) have taken the decision to access the *hosting* services offered by large international publishers such as Elsevier (Ainsworth & Rusell, 2018). This route is taken in the hope that it will give them greater visibility. The economic cost of this oversight is unknown though it will undoubtedly be huge (despite having been solicited in accordance with administrative transparency laws, the content of UNAM agreements with the Dutch multinational has been declared secret; Priego et al. 2017). In a context characterized by a scarcity of research funding, this implies a drain on resources (that are generally public) whose justification is questionable. In fact, this route, even when not blinded, has suffered serious setbacks (Ainsworth & Rusell, 2018), specifically due to the conditions imposed.

Other more effective tactics when striving for greater visibility and dissemination of Latin American journals at a global level, consist of publishing simultaneously in both the local vernacular (in order to reach the local community) and in English (in order to reach the rest of the international community that does not use that language). This is not a procedure without problems (given that it implies a greater cost to authors and/or publishers) but it combines all required purposes in a more affordable way. It concerns a process that has been recommended by the creators of SciELO (Meneghini & Packer 2007).

Nonetheless, in order to better understand the situations in which we currently find ourselves, it must be understood that awareness has been raised over the last two or three decades in relation to the fact that Latin American research was considered, to a large extent, within the category of *grey literature*. This was due to its lack of dissemination and visibility (Cetto, Alonso-Gamboa, Packer & Aguado-López, 2015). It was very difficult for the region to turn around the fact that it was barely present in the principal international databases. Evidence of efforts to this effect is seen in the way that the region started to promote diverse initiatives which, at the very least, attenuated these circumstances and favored the circulation of information. These initiatives took advantage of the opportunities offered by technology and having a shared language. In addition to fulfilling their objectives to a large extent, these initiatives have achieved outcomes beyond those stipulated in initial plans. Many of these have turned out to be of great interest including strengthening the Latin American ambit as a community of interest and scientific knowledge dissemination, which is independent of the mainstream but not isolated from or dismissive of it. It has been shown that joining the two together helps to build strength.

We will now cite some of the initiatives (for a more in-depth consideration, see Alperín & Fischman, 2015 or Vuotto, Di Césare & Pallotta, 2020) that seem to be more meaningful to us. The selected examples

permit us to at least illustrate the development approach taken and, in a general way, the impulse this has meant to the tradition of Open Access in the region:

- A) Pioneering Latin American databases: databases such as CLASE (1975), Periódica (1978), IRESIE (1979) and LILACS (1982), with strictly regional content, started to be developed in the 70's and 80's.
- B) Latindex (1995): a product created by the National Autonomous University of Mexico with a Latin American nature (whether for the origin or content of publications). This has had a primordial contribution to the better quality of journals in the region, as it has led to the development of clear and verifiable quality criteria (evaluated in a decentralized way within each country). In this way, each publisher was now able to consult and correct all aspects that still failed to reach required standards. This game of *avant la lettre* unintentional *gamification* also counted on rewards. Improved scores are publicly presented but, also, when a determined level is reached, the journal is included, via the shared *directory* of all journals, in the small regional Olympus of all journals. This is a selective *catalogue* which is accredited with an appropriate relevant quality level.

At the time of writing these pages, the *directory* comprises 29,026 journals, whilst the selective *catalogue* (that has been recently renovated in line with required quality criteria) groups together 2,154 journals. This recently surpassed one and a half million indexed articles. The most productive country is Brazil, with regards to production size and volume, followed by Spain, Mexico and Argentina. Latindex enables a large number of statistics to be consulted in order to better understand the publishing situation of the region, whilst also continuing to broaden information fields. In this sense, it is possible to consult journals that are available online, all of which are Open Access or refereed journals. In 2011, the “Latindex portal de portales”

(<http://www.latindex.ppl.unam.mx>) was initiated. This provides access to a vast array of Latin American literature and includes access to Dialnet, Scielo, Redib, Redalyc, etc.

C) **SciELO** (1997): The *Scientific Electronic Library Online* is a Brazilian initiative which aims, on the one hand, to bring greater visibility beyond the context in which work is produced (most isolated zone of the region, despite its size and strength, due to language issues). It strives to strengthen ties with the rest of the Latin American community and to build regional cooperative systems. Each national system (there are 16, of which 13 are in Latin America, the South African Republic, Portugal and Spain, although in the latter only the journal *Salud* [Health] is indexed) indexes and publishes articles. It houses 373 journals with almost 400,000 documents. Its decision to incorporate itself into the Web of Science from 2014 onwards (within the plan of including national and regional databases from ambits that receive little coverage such as China, Russia, Korea or Latin America) implied a qualitative jump in international visibility of Latin American journals, including the *SciELO Citation Index* (Minniti, Santoro, & Belli, 2018).

D) **RedALyC** (2003): The “Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal” is a virtual newspaper library with regional reach which was conceived by the Autonomous University of the State of Mexico

(UAEMEX). It holds copies of articles that make up affiliated journals (although it follows the custom of adding them to the front page and making citation suggestions that are different to the original citation so that they can be included in their own repository). This creates a degree of confusion, and makes follow-up and impact estimation more difficult. It currently houses a total of 1,310 journals and 650,000 articles. Nevertheless, from August 2019 onwards, following an unreasonable and poorly explained policy, it started to demand that all affiliated journals use XML JATS markings in their articles. This presents an additional technical complication to the region’s tiny publishers and another burden to publishing teams. This has led to the practical exclusion of a relevant number of journals which are not indexed. This technological development does not seem to explain the decreased coverage and visibility of so many good journals, since a notable loss has occurred in all aspects.

These last three databases (Latindex, SciELO and Redalyc) have produced a strong impulse in favor of the Open Access movement, whilst also encouraging the fulfilment of their own quality criteria. Despite being unconnected initiatives, the journal model sculpted by these different quality criteria has turned out to be fairly homogenous, as can be seen in Table 2. Table 2. Quality criteria of regional information databases

Table 2. Quality criteria of regional information databases

Quality criteria	Latindex*	RedALyC	SciELO
ISSN	X	X	X
Originality	X	X	X
Peer Review	X	X	X
Periodicity	X	X	X
Antiquity min.		X	X
Author instructions	X	X	X
Article structure	X	X	X
Minimum N of articles		X	X
Institutional information	X	X	X
Publishing structure	X	X	X
Article’s external origin	X	X	X
Distribution	X	X	X

Indexing	X	X	X
Impact factor			X
Prestige			X

Source: Elaborated by the authors using Amorim, Degani-Carneiro, Ávila and Marafon (2015)

\*Latindex changed its quality criteria, adding some new criteria in 2018-2019

At least nine countries in the region have developed their own evaluation programs (and, often, classification programs) for research journals. de Oliveira et al. (2015) have grouped these into three system families (Table 3):

*Group 1:* Countries with their own evaluation systems that stratify scientific journals (Brazil –Qualis- and Colombia – Publindex-).

*Group 2:* Countries with their own evaluation systems that generate scientific journal indices (without stratification). Argentina, Costa Rica, Cuba and Mexico are included in this group.

*Group 3:* Countries lacking an autonomous evaluation system that adopt policies to drive scientific publication and employ the

evaluation criteria of regional databases. Examples include Chile and Peru, who use SciELO quality criteria.

As we can see, despite the integration of shared management and dissemination elements, there is a large degree of variation in the publication rating systems most adopted by the best search engines.

In summary, Latin American social science journals provide a dynamic and peculiar object of study. They combine a highly personal profile (that is world leading in relation to the Open Access model), with great institutional dependence leaving them totally atomized and lacking resources.

Table 3. Evaluation systems of scientific journals, coordinated by governing bodies of LA&C countries

Group	Country	Journal evaluation system			
		Name of the evaluation system	Year of inception	Responsible body (abbreviation)	Responsible body (full name)
Group 1	Brazil	Qualis	1998	CAPES	Higher Level Personnel Improvement Coordination
	Colombia	National bibliographic index - PUBLINDEX	2002	COLCIENCIAS	Administrative Department of Science, Technology and Innovation
	Argentina	Basic Nucleus of Argentinian Scientific Journals	2001	CAICYT	Argentinian Centre of Scientific Information and Technology
Group 2	Costa Rica	UCRIndex	2003	UCR	University of Costa Rica/ Vice-rector of Research
	Cuba	National Register of Serial Publications	2003	CITMA	Ministry of Science, Technology and the Environment
	Mexico	Mexican Research Journals Index	1993	CONACYT	National Science and Technology Council
Group 3	Chile	Program of Chilean Scientific Journals	n/a	CONICYT	Scientific Information Program
	Perú	Portal of Peruvian Scientific and Technical Journals	2010	CONCYTEC	National Science, Technology and Technology Innovation Council
	Venezuela	Revenyct (Index of Venezuelan Science and Technology Journals)	2002	ULA	University of the Andes

Source: Amorin et al. (2015)

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