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Global Epistemologies: Concepts, Methodologies, and Data Systems

Parochialism and Its Meanings in the Latin American Social Sciences: Experiments with Web of Science and SciELO

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In this article, we discuss parochialism in the social sciences (anthropology, political science, and sociology) via scientific indexing data. We take parochialism to mean the discussion of problems and themes related to the researchers' national societies. To this end, we selected from the Web of Science and SciELO databases documents that have at least one author with institutional affiliation in the United States, Brazil, Argentina, Chile, or Mexico, from 2002 to 2021, totaling 175,821 documents. Based on scientometric techniques, text mining, and network analysis, we propose a multilevel approach to the topic of parochialism in the social sciences. The results point to close degrees of parochialism in all the selected national cases, varying in meaning according to the level of analysis (coauthorship, bigrams, and bibliographic references).

INTRODUCTION

In the mid-1980s, German sociologist Ulrich Beck formulated what would become the premises of the sociology of reflexive modernization (or "second modernity"), founded on the warning that, to account for contemporary social processes, it would be necessary for social scientists to break with what he called "methodological nationalism" (Beck, Willms, and Araujo 2003). According to the author, in the face of recent transformations in the globalized world, it would no longer be possible to analyze complex social phenomena by circumscribing them to national society. Concurrently, de- or postcolonial studies, in another register, have also highlighted the need to situate epistemologically the knowledge produced in global social dynamics, particularly given the asymmetries implied by power relations between centers and peripheries (Alatas 2016). While our intention here is not to discuss the broad and plural de- and postcolonial "turn" in the social sciences, it is important to highlight how these studies have also placed emphasis on the complex and unequal dynamics of knowledge production in which national and transnational processes intersect. These discussions, which took place within, or cut through, the social sciences, posed as a central problem to theory the very production and circulation of knowledge, both in its methodological ("national phenomena" and "globalization") and epistemological ("cosmopolitanism" and "parochialism") aspects (Archer 1991; Heilbron 2014).

The de- and postcolonial critique in the social sciences revealed, once again—and with wide reach among specialists—a more acute perception of the limits of current views that see, in the social sciences practiced in the world's great centers, especially the United States and Europe, a greater propensity for theoretical maneuvering with alleged universal scope and applicability. Meanwhile, in peripheral countries, the social sciences would be confined to national problems, leaning toward empirical research with only local validity (Connell 2007). It is not our intention to rediscuss these issues but only to point out how the social sciences, in various parts of the world, connect to local and/or national problems that give meaning to the theoretical and methodological questions they raise, as numerous studies have shown (Beigel 2018; Brasil 2013; Heilbron 2008). We take "parochialism" to refer to the discussion of problems and themes related to the researchers' national societies, which may or may not have reverberations beyond their societies of reference, in methodological or epistemological terms. We will see, therefore, that parochialism, at least in the way we understand it, is a constituent part of the social sciences practiced not only in peripheral countries but also in central countries (Europe and the United States, espe-

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cially)[1] (Botelho, Ricupero, and Brasil 2017; Brasil and Carvalho 2020). Any theorization, explicitly or not, starts from some empirical assumption. It is not a matter of highlighting this point but of showing how these empirical foundations infiltrate the thematics of such studies, and the ways in which social scientists in each national case build their arguments from a common intelligibility framework, which we will seek to demonstrate mainly through the sharing of cited references.[2] What differentiates, therefore, the "parochialisms" in each national case are their meanings, linked to thematic discussions related to specific contexts—national and/or regional—and to the disciplinary specialties of the social sciences.

MATERIALS AND DATA

With these questions in mind, we now conduct an exploratory metadata analysis of documents—articles, editorials, and reviews, among others—that have at least one author with institutional affiliation in the United States, Brazil, Argentina, Chile, or Mexico, from 2002 to 2021. This selection is justified given that the institutionalization of the social sciences in South America has been tied, largely, to the prestige and recognition of the social science courses, research institutions, and universities in these countries, along with the relevance of their scientific production and publishing policies (Beigel 2009; Blois 2018; Jackson and Blanco 2014; Miceli 1995, 2001; Trindade et al. 2007). The incorporation of documents authored with US-American institutional affiliation fulfills an important role in the argument; it allows for not only intra-comparison of documents with Latin American institutional affiliation, but also inter-comparison with those of US-American institutional affiliation. Thus, we will be able to indicate both the specificities and the similarities regarding the pair "parochialism and universalism" in the social sciences in each case analyzed. The documents that will serve as the empirical basis for this study were published in social science journals—here understood as sociology, anthropology, and political science—indexed on the Web of Science (WoS) platform, maintained by Clarivate Analytics. The criteria for choosing WoS are as follows:

1. Unlike other major scientific indexing databases, WoS grants access to the metadata of the documents to be analyzed with no quantity limit for downloading.
2. Since 2014, the Scientific Electronic Library Online (SciELO), the main scientific indexing database in Latin America, interoperates with WoS, constituting one of its regional collections (Packer 2014). Thus, the metadata of the journals indexed in SciELO collections are also available (at least since 2002).
3. Although the SCOPUS database, by Elsevier, another important scientific indexing base, has greater coverage of journals dedicated to the humanities than WoS, we have seen that there are no significant differences, as far as the social sciences are concerned, that could affect the analysis proposed.
4. The advantage of working simultaneously with two interoperating databases, WoS and SciELO, is that the output format of the metadata (our main research material) is identical or at least equivalent, which greatly facilitates the integration of the databases.
5. Last but not least, the choice of using WoS and SciELO is precisely for their differences. WoS has a strong selection bias in favor of Anglophone journals from the countries of the so-called Global North, especially for the "hard" sciences, whereas SciELO is a reference in the promotion of open-access practices and indexes a relevant production from the so-called Global South, notably in the fields of public health, agricultural and environmental sciences, and the humanities and social sciences as a whole (Vélez-Cuartas, Lucio-Arias, and Leydesdorff 2015)—cf. the next section.

We searched in journals indexed in at least one of the social science disciplinary areas (sociology, anthropology, and political science) for publications that have at least one author with institutional affiliation in these countries. In WoS, journals may be indexed in more than one disciplinary area, identified in the metadata as "SC" field (i.e., "Research Areas"); most of the time, these three disciplinary areas do not appear together and, therefore, many of the publications whose metadata we downloaded do not directly concern the social sciences, understood as the set of these three disciplines. It is also worth noting that the perception that these disciplines compose a set may be more common in Brazil than in other Latin American countries, given the integrated pattern of their institutionalization in Brazil. The trajectories of institutionalization of anthropology, sociology, and political science have not always been

1 The research program on the scientific system, carried out by Rudolf Stichweh through the framework of social systems theory, has drawn attention to this point. As the horizon of modern society—and also of its subsystems—would be the framework of a global society, the scientific system, in its evolutionary dynamics, would promote an intense process of "nationalization," especially at the level of access (democratization) and of scientific organizations, which, simultaneously, would have operated as an important vector for the global expansion of science as a truly worldwide system. This would explain, for instance, why the frontiers of scientific-disciplinary specializations do not respect the political-geographical divisions of the nation-state system (Stichweh 1992, 1996, 2003, 2022).

2 Several data presented below aim to corroborate how themes and cognitive resources—such as bibliographic references—tend to present specific patterns in each national case. In no way does this suggest that we are assuming there are no disagreements about the objects and themes studied—only that the intelligibility given to research objects and themes is based on a common dialogue with other expert interlocutors, even when there is disagreement.

coherent or synchronized among themselves; on the contrary, their relations sometimes become conflictive.

To attempt to circumvent this problem, we filtered the downloaded metadata by selecting only journals with "sociology" or "anthropology" or "political science" as their first indexing Web of Science area, as we identified that the order of the areas listed tends to reflect the journal's publication profile. After this filtering, we arrived at a total of 178,039 documents with country of institutional affiliation corresponding to the national cases selected here, of which Brazil had 11,193 documents (WoS and SciELO), Chile 5,146 documents (WoS and SciELO), Mexico 8,941 documents (WoS and SciELO), Argentina 6,739 documents (WoS and SciELO), and the United States 146,022 documents (WoS only). These total numbers contain duplicates—that is, documents that are part of different national samples, as the articles may be coauthored by authors with institutional affiliation in different countries. When we remove the duplicates, we arrive at a total of 175,821 documents. In the case of Latin American countries, we have a total of 32,019 documents with duplicates and 31,360 documents without duplicates. Whenever aggregating the documents from different countries for analysis, we remove the duplicates.

It is also worth mentioning why we use metadata for the main source of analysis given the questions raised. First, it seems that scientometric techniques have been important to the exploration of issues related to the social sciences, especially those having to do with the constitution, production, and circulation of knowledge (Bourdieu 1975; Brasil, Jackson, and Paiva 2020; Campos and Szwako 2020; Carvalho and Brasil 2020),[3] although they have seldom been used to analyze, in particular, the relationship between "parochialism" and "universalism." Perhaps one of the reasons for this is the routine perspective of theoretical analysis we could call *close reading*, the best expression of which are the bibliographic reviews and theoretical essays in which the particularities of scientific formulations or discussions are reached via close reading of texts. *Distant reading* (Moretti 2008), an alternative but not necessarily contrary position, allows us to simultaneously deal with an expressive and complex volume of texts and seek strategies to codify them using data visualization tools and statistical measurement of their contents. This is not to draw a line of rupture, or much less to suggest any superiority of distant reading over the more established protocols of textual research. On the contrary, distant reading does not compete with deep reading, as it constructs a new object of research, one that has no commensurability with texts taken individually.

Second, the large set of metadata we will be dealing with allows us to cross-reference several variables "internal" and "external" to the texts, something not always possible with close reading. Although it may seem counterintuitive, research with large volumes of data does not necessarily imply only a panoramic view of what is being analyzed. In fact, the opposite is also possible since one can thoroughly describe the different variables found (González-Bailón 2013). In the case of this article, for example, we will relate mentions of certain terms or categories present in the abstracts to the authors' countries of institutional affiliation or the patterns of bibliographic coupling (a bibliometric technique that we will explain later) in each national context from a comparative perspective.

In the wake of fundamental works that attempt to link scientometrics and sociology, we read the metadata of scientific articles as communicative codes that organize different areas of knowledge and their reciprocal relationships (Leydesdorff 2001b, 2001a). In other words, scientific metadata allows not only for the treatment of a huge volume of information but also for understanding the way in which science or certain disciplinary specialties are constituted from an intricate network of relationships woven by authors, works, categories, and institutions. It is true that the communicative codes of science assume a certain autonomy in relation to the processes to which they are initially linked—not by chance, categories, concepts, methods, and discourses circulate and go on constituting patterns and trends at an emergent level (reflexive and second order) beyond the objectives and/or intentions of the institutions and observable authors who formulated or conceived them. On the other hand, like any social phenomenon, scientific communication also expresses (through its own encodings) the social conditions in which it develops. In this sense, even if the documents selected here do not elect as a theme the relationship between parochialism and cosmopolitanism in the social sciences, we assume that the methodological, theoretical, and empirical choices present in them reveal, through the various metadata that we will analyze, the way in which that duality is operationalized. In other words, we are interested in capturing the relationship of each social science case analyzed here with its respective national societies.

To address this question, we use scientometric, text mining, and network analysis techniques to extract (a) mentions of countries from document titles and abstracts; (b) mentions of states/provinces from document titles and abstracts; (c) most frequent terms and categories from document titles and abstracts; (d) countries of institutional affiliation of authors; and (e) citation analyses of documents. Each of these data, analyzed separately and together, can provide important insights into the relationships between social science and national context. A comparison also allows us to "decenter" each selected case by showing how (self-) reference to national intellectual traditions and themes is not something merely typical of the peripheral social sciences but rather a pattern representative of the field and its groupings. In other words, the "cosmopoli-

3 See, for example, the three volumes published by the journal *BIB-Anpocs*, in which the bibliographic balances of the various areas of knowledge of the social sciences in Brazil have amply mobilized scientometric resources and techniques. Cf. http://www.anpocs.com/index.php?option=com_content&view=category&layout=blog&id=2758&Itemid=915 (accessed on 27 November 2022).

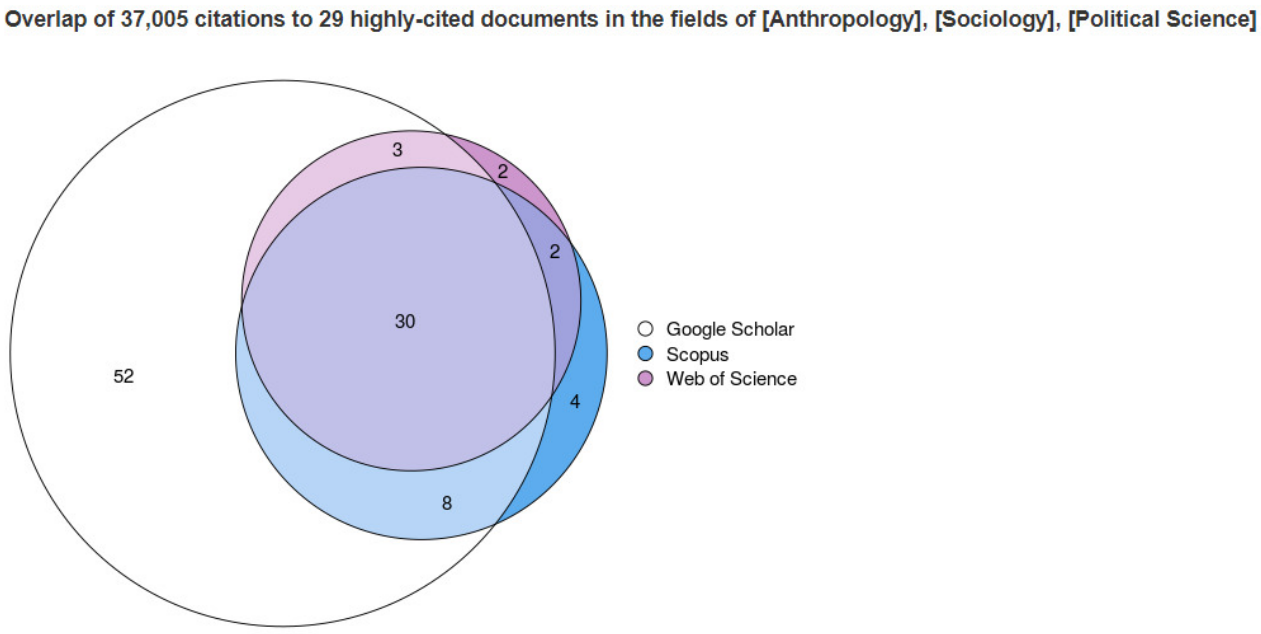

Figure 1. Created using Alberto Martín-Martín et al.'s interactive dashboard (2020).

tanism" or "transnationalism" so desired and fostered by several social scientists is not configured at the expense of the "parochialism" that inevitably marks national social sciences.

ANALYSIS OF THE COVERAGE OF INDEXING DATABASES: LIMITS AND BIASES

As stated earlier, WoS and SciELO are the two article-indexing databases explored in this research. They are both prestigious and internationally recognized databases, but they could not be more different. The Web of Science is one of the most traditional and consolidated scientific indexing databases in the world, but it has many biases and limitations when it comes to analyzing scientific production carried out in peripheral contexts or in the so-called Global South, especially in the fields of the humanities and social sciences. Nonetheless, to this day, most scientometric analysis programs are designed with the format of data extracted from this database in mind. SciELO, on the other hand, is a world leader in the promotion of open science, and its collection focuses mainly on the scientific production of Latin America and the Caribbean; the Brazilian collection is by far the largest collection in this database. However, the use of these two databases—for their differences, as well as their complementarities—can provide an interesting path for research.

But we must always remember that observing science through these databases implies (as in any research) being aware of our blind spots. We must be aware of what, beforehand, we will not be able to see.

On the one hand, by restricting ourselves to the scientific production found in journals with indexing and selective editorial policies—a condition for a journal to belong to one of the databases selected here—we also limit ourselves to the production of a certain "scientific elite," since publishing in a good journal requires resources, even if that resource is "prestige." Furthermore, the focus on the article ends up invisibilizing certain textual supports that, in the social sciences—particularly in strands less permeated by the habitual models of the hard sciences—are a very important part of the normal dynamics of scientific communication, such as books and articles in widely circulated and/or nonindexed journals.

On the other hand, these databases offer differing coverage of disciplines and research areas, which can lead to biases of different natures. As several recent studies have shown (Martín-Martín et al. 2020; Visser, van Eck, and Waltman 2020), the coverage of indexing databases is very unequal in regard to the various knowledge domains. With the interactive dashboard made available by Alberto Martín-Martín and his team (Martín-Martín 2020), it becomes possible to compare different indexing databases with respect to their coverage of distinct scientific disciplines. It is noteworthy that more than half of the scientific production identified as belonging to the fields of anthropology, sociology, or political science, according to the survey carried out, is not indexed in the two main scientific article-indexing databases (Web of Science and Scopus), being locatable only in Google Scholar. This, of course, does not count the enormous number of documents that not even Google Scholar can find.

For comparison purposes, below is a table summarizing the coverage study done by the same team of researchers, which highlights how, in fact, the coverage of the more "traditional" indexing databases (Web of Science and Scopus) is considerably lower for the humanities and social sciences vis-à-vis the other domains of the scientific field.

	N	% of citations found (relative to N)					
		Google Scholar	Microsoft Academic	Scopus	Dimensions	Web of Science	COCI
Humanities, Literature & Arts	89,337	87%	39%	31%	29%	25%	18%
Social Sciences	406,661	88%	47%	40%	36%	33%	20%
Business, Economics & Management	235,338	88%	47%	34%	32%	29%	19%
Engineering & Computer Science	691,164	88%	63%	61%	54%	48%	30%
Physics & Mathematics	317,320	90%	57%	64%	59%	59%	36%
Health & Medical Sciences	1,001,507	85%	63%	59%	58%	51%	27%
Life Sciences & Earth Sciences	571,817	89%	68%	64%	63%	60%	32%
Chemical & Material Sciences	253,990	90%	69%	75%	72%	72%	32%

Figure 2. Table from Alberto Martín-Martín et al. (2020).

Percentage of citations found by each data source, relative to the total number of citations found overall and by broad areas.

BUILDING A MAP OF SCIENCE: INTERACTING DISCIPLINES

Despite these limits implied by the observation of scientific production via article-indexing databases, we believe that mobilizing a vast collection of documents can at least offer new insights about some patterns and trends in scientific communication in the Latin American social sciences.

However, before we go into the more substantive results regarding the documents themselves, particularly on the question that interests us most—the effects and meanings of parochialism in social science production in each national case—it is worth paying a little more attention to how the indexing databases attribute these documents to certain areas of knowledge. After all, it is from this classification regime operationalized by both Web of Science and SciELO that we empirically delimit what are, ultimately, the three social science disciplines analyzed here—anthropology, sociology, and political science.

Each publication is assigned a list of up to six scientific disciplines (Web of Science/SciELO Categories, or the WC field tag in the metadata); in the latest WoS update, implemented in 2019, there were 229 Web of Science Categories (WC) defined.[4] However, it should be noted that the assignment of disciplines is made not at the level of the documents themselves (articles, reviews, etc.) but at the level of the journals that publish them, according to criteria defined by the indexes.[5] Since the disciplines in focus here interact with different fields of knowledge—that is, they appear listed alongside numerous other disciplines in this classification process—it is possible to create a matrix of co-occurrences of categories (scientific disciplines) and thereby create some more general visualizations of the ways in which the different scientific domains relate to one another.

The most consistent efforts to create maps of science—cartographic representations of the communicative structures that bind disciplines together—are attributable to the work of Loet Leydesdorff and his extensive team of collaborators (Carley et al. 2017; Leydesdorff, Carley, and Rafols 2013; Rafols, Porter, and Leydesdorff 2010).

In figure 3, we have one of the latest constructed versions of the map of science by Leydesdorff and his team (Leydesdorff 2021). Using data from the Web of Science (229 registered research areas), Leydesdorff created a network of relationships between areas by means of a co-citation analysis between journals. The result is this "semi-oval" object showing the neighborhoods among four identified major areas—green (physics, chemistry, materials science, mathematics, etc.), yellow (soil and environmental sciences), red (life and health sciences), and blue (humanities and social sciences). Notice that the various fields of psychology and social sciences in blue almost close the "circle" thanks to their not-so-dense relationships with the field of applied mathematics and statistics; their relationships are much denser with the large fields of biology, health, and medicine, which are adjacent to it.

Based on the instrument proposed by Leydesdorff, we construct here our own maps of science, to give more freedom and clarity to our comparative visualizations. Our ba-

4 Only in this section, dedicated to modelling a "map of science" of the Web of Science and SciELO collections, we used the WC field tag. In the rest of our research, we used the SC field tag due to its less restrictive criteria for identifying scientific disciplines.

5 For an explanation of the criteria for assigning categories to journals, see Anon. 2022.

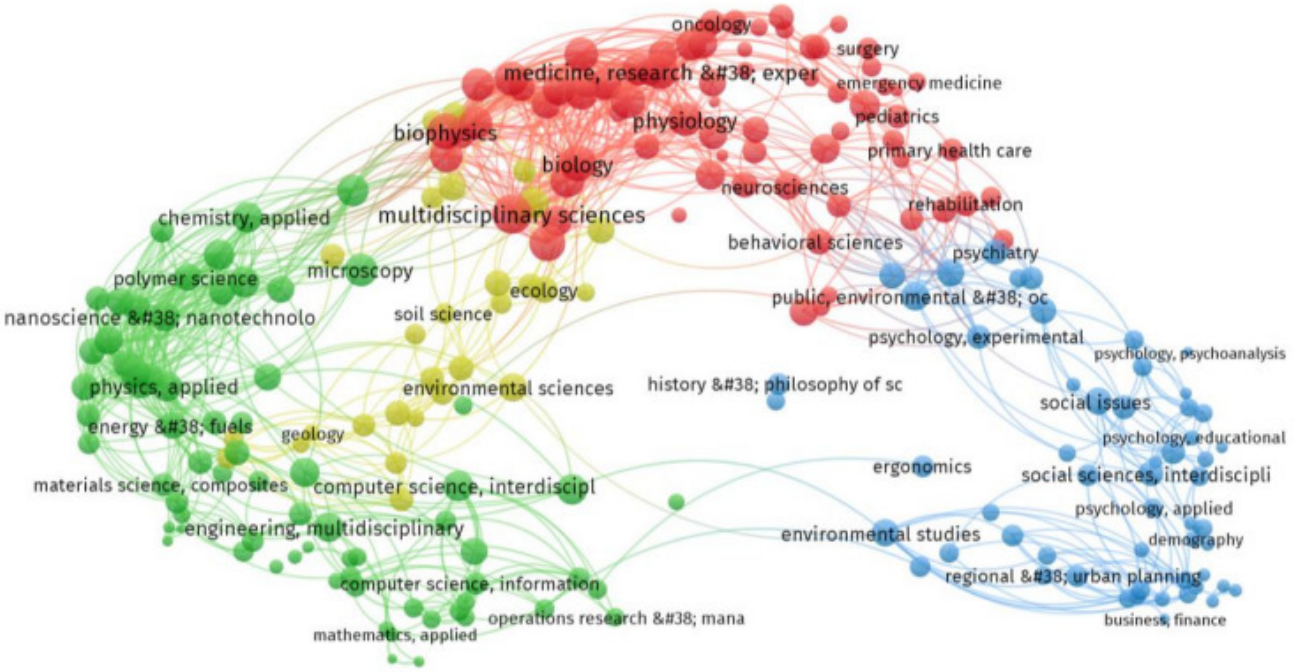

Figure 3. Map of science (Leydesdorff 2021, 3).

Basemap 2019; 229 WCs (Web of Science Categories); source: JCR data

sic motivation is to compare the distribution of documents by areas of knowledge and their reciprocal interactions in the two selected indexing databases—Web of Science and SciELO. This will allow greater control over the profile of the collections and greater awareness of the possible biases in the composition of their collections.

It should be recalled that the "boundaries" both within the social sciences and between the social sciences and other knowledge domains are not stable and vary greatly from country to country, expressing the different formative trajectories of these disciplines over time (Arciniega 1996; Jackson and Blanco 2014; Miceli 1995, 2001; Trindade et al. 2007). The meanings attributed to the terms "anthropology," "sociology," and "political science," always subject to dispute and controversy, emerge only within a relational dynamic between disciplines.

Let us first look at how the WoS and SciELO collections organize, in general, the disciplines (categories) and their forms of interaction. To do this, we downloaded the metadata of the last 20,000 articles from the Web of Science (as of October 2022) and the last 30,000 articles from the SciELO database (also as of October 2022), regardless of their subject areas. Using the "WC" field (Web of Science/SciELO categories) of the collected metadata, we modeled a co-occurrence network of categories and, to visualize it, we used a force algorithm (Force Atlas 2) (Jacomy et al. 2014). The partitioning into groups of disciplines was done using a well-known community detection algorithm (Blondel et al. 2008).

In the case of WoS, it is interesting that, even using other data (co-occurrence of research areas), we arrived at a "semi-oval" structure analogous to that found by the analysis of Leydesdorff et al. (who used inter-journal citation data).

The distribution, in WoS, is clearly unequal between the so-called hard sciences and the humanities and social sciences (in light blue in the network shown in figure 4). For better readability, we have left visible only the disciplines that contained, in this sample of the last 20,000 documents, more than 100 occurrences. None of the three social science fields selected stands out in the map generated. Table 1 shows the most frequent areas, according to our sample.

In the case of the SciELO collection, we also found something similar to the "semi-oval" representation of WoS (the methodology we used here was identical), but with specificities. We can see how the large group of humanities and social sciences (in yellow) is well represented in this collection, which also covers considerably the areas of life science, especially health (the initial target of the database), as well as soil and environmental sciences. It is interesting to note how the yellow cluster has preferential connections with communities linked on the one hand to the fields of psychology, nursing, and social work, and on the other to the medical sciences and public health. The position of sociology in SciELO, moreover, is in a strategic place of intermediation between the social sciences and (in a broad sense) the field of health.

Again, in contrast with the WoS database, we can observe how the most frequent areas in SciELO include several fields of the humanities and social sciences, among them sociology and anthropology.

If it is true, then, that WoS, compared to SciELO, indexes the social sciences proportionally less in relation to other areas of knowledge, we can also observe that, at least for the four national cases selected here, there are considerable

Figure 4. Co-occurrence of WoS research areas.

differences in indexing volume among the disciplines. Using as a parameter all the documents available (without temporal filters) in the two databases that have registered in the "WC" field (Web of Science/SciELO categories) at least one of the three social science disciplines—anthropology, sociology, and political science—we arrive at the results displayed in table 3, organized according to country of institutional affiliation of the authors. At this point, we did not select only documents that contained one of the three areas as the first category listed—this filter will be applied only for analyses in the following sections, in order to better delimit publications in journals dedicated primarily to the social sciences. After all, we are interested, more generally, in how these databases perceive themselves, through their disciplinary taxonomies, and in better understanding what we can observe by making use of these classifications.

The inclusion of archaeology and evolutionary biology (added together) in the same table was due to the significant number of documents that also presented this area of knowledge in their metadata. This was not an expected result, but one whose qualification will be decisive for analyses made later on, given its interaction with some areas of anthropology—or even its understanding as part of a broader conception of anthropology, in which social and cultural anthropology and physical and biological anthropology would coexist, despite the many tensions implied by this coexistence (Langlitz 2017).

We can see that, except for the somewhat balanced distribution among the three disciplines in the composition of the publication profile with institutional affiliation in Brazil in WoS, in all other cases—and in both collections (WoS and SciELO)—there is a clear unevenness in the volume of documents indexed. More generally, WoS indexes more proportionally anthropology and political science, in that order, than sociology. And it is noteworthy that approximately 40 percent of the documents (2,960 out of a total of 7,415 documents) that presented anthropology as a subject area in WoS also had archaeology or evolutionary biology listed in their metadata, indicating a very considerable presence of articles from these fields in its core collection. In contrast, in SciELO, the proportion of archaeology and evolutionary biology in anthropology as a whole amounts to only approximately 12 percent (1,160 out of a total of 9,565 documents), which signals the centrality of the social and cultural strands of anthropology in this database. Furthermore, SciELO indexes much more sociology, proportionally, than anthropology and political science, in that order. It is true that the classification of a journal as belonging to the field of sociology in SciELO, at least in the SciELO/Brazil collection, meets very broad criteria; to give an example, the *Revista Brasileira de Saúde Pública* indicates sociology as one of its disciplinary areas. But the much larger volume of this discipline in relation to the others, particularly in the Brazilian and Mexican cases, is striking.

Although it is somewhat risky to extrapolate from the results of table 3, it is possible to conjecture that anthropology (in particular the kind that interacts with the fields of archaeology and evolutionary biology) and political sci-

Table 1. Number of documents by research area (WoS). The first 30 disciplinary areas with more than 100 documents in the sample.

WoS categories (research areas)	Number of documents
materials science, multidisciplinary	1,799
chemistry, physical	945
chemistry, multidisciplinary	866
environmental sciences	849
multidisciplinary sciences	725
nanoscience & nanotechnology	710
physics, applied	681
engineering, electrical & electronic	674
energy & fuels	568
medicine, general & internal	547
neurosciences	453
pharmacology & pharmacy	452
surgery	436
biochemistry & molecular biology	408
optics	385
oncology	377
public, environmental & occupational health	369
computer science, artificial intelligence	344
engineering, chemical	314
psychiatry	311
food science & technology	311
clinical neurology	307
geosciences, multidisciplinary	297
mathematics	297
plant sciences	282
computer science, interdisciplinary applications	277
physics, condensed matter	272
engineering, mechanical	267
ecology	265
physics, multidisciplinary	265

ence (at least in its more hegemonic aspects) have greater "translatability" in the scope of the WoS collection—that is, in the publishing circuit dominated by central countries (and by the English language)—than sociology, which is perhaps more predominant in Latin American scientific circuits (in which SciELO is a major indexing hub). However, more data would be needed to confirm this hypothesis.

PAROCHIALISM AND UNIVERSALISM: A COMPARISON BETWEEN LATIN AMERICA AND THE UNITED STATES

Since the database-indexing unit used in this paper is journals, the previous section is fundamental to providing a general map of how the social sciences are thematically organized in each national case. In this section, we use the document metadata (abstracts, titles, institutional affiliation, and bibliographic references) to create forms of classification and analysis different from WoS/SciELO indexing—that is, based on the relationships that can be established through the analysis of the materials themselves (and at the document level, rather than at the journal level). As one way to qualify the relationship between parochialism and cosmopolitanism in the production of each national case, we calculate the indexes of "Single Country Publications" (SCP) and "Multiple Country Publications" (MCP), inspired by the bibliometrix package in R. The SCP index calculates the absolute number of documents with an author from the country of the selected case, while the MCP calculates the absolute number of documents with one or more institutional co-affiliations different from the country of the national case under analysis. To make comparison possible, we can calculate the proportion of SCP documents for each national case, seeking to highlight similarities and differences between the cases. We see in table 4 that proportionally, there are no substantial differences between the selected national cases, revealing that the "endogeneity" of coauthorship—that is, institutional collaboration within the same country—is a characteristic of not only Latin American social sciences. The only national case that stands out from the others is Chile, which has an SCP index of 0.73 percent.

It remains, however, to investigate whether the observed differences in the proportion of SCP production in each case are also expressed in differences at the thematic level. One way to capture these differences is via the frequency of "bigrams" contained in the document abstracts. Bigrams are pairs of words that appear frequently associated in a given textual corpus. Compared to the frequency of isolated terms, they allow us to better discern the possible semantic contexts of the scientific production under analysis. In the case of the documents that make up our sample, the "bigrams" were extracted from the abstract field after undergoing a process of cleaning out stop words (such as pronouns, conjunctions, and articles).

It can be seen in figure 6 that, in both the North American and the Latin American cases, there is a relatively strong correspondence between the bigrams of MCP documents, largely due to the strong presence of physical anthropology and archaeology, areas that exhibit important international collaboration among their researchers. The exception is the Brazilian case, in which the set of MCP documents reveals a frequency of bigrams more related to the social sciences. On the other hand, among the SCP documents of each case analyzed, we see that, despite the presence of bigrams related to archaeology and physical anthropology, especially in the case of Chile and Argentina,

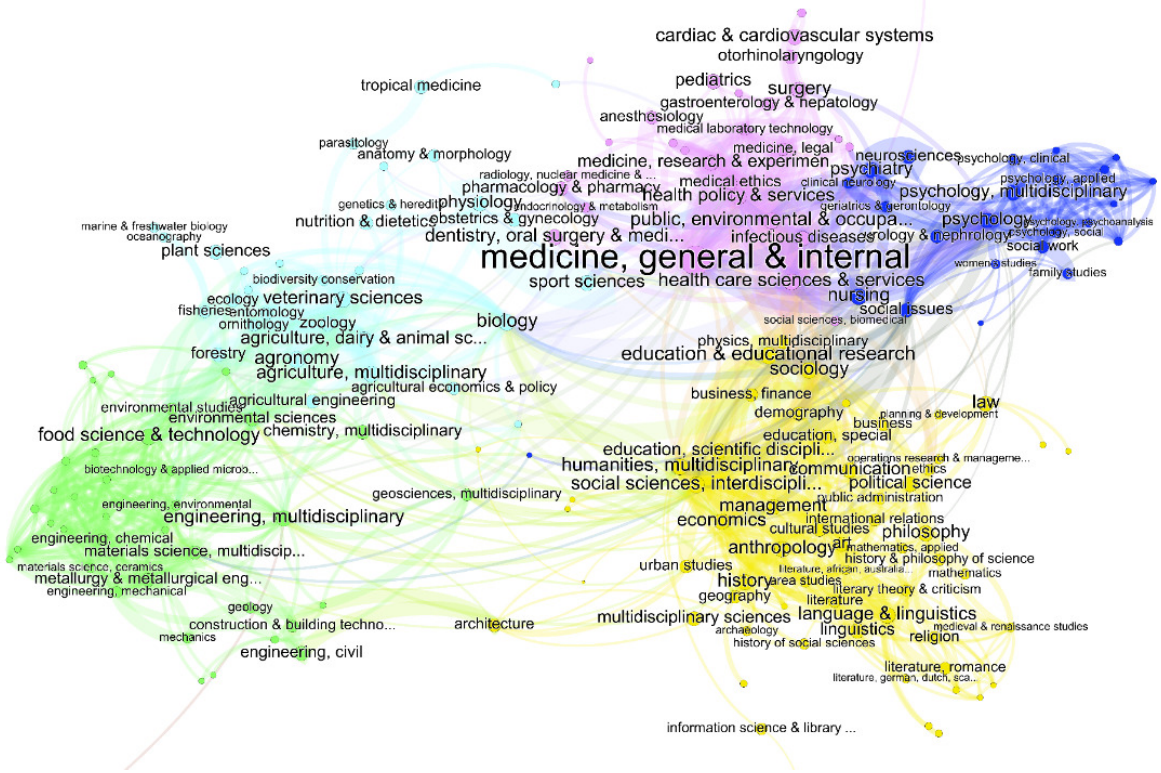

Figure 5. Co-occurrence of SciELO research areas.

bigrams related to the social sciences are frequent. In both sets, MCP and SCP, it is possible to notice the presence of bigrams that self-refer to the national cases. The US MCP set is the exception.

When we separate the most frequent bigrams by the three areas of the social sciences (sociology, anthropology, and political science), we can see more clearly how the national question—or "provincialism," in the sense understood here—is presented in different ways. Among the Latin American cases, in all three areas, reference to the continent is striking—an important aspect of qualifying the "provincialism" of these cases, which is often expressed in research dedicated to Latin America rather than exclusively to the country itself. In relation to sociology specifically (figure 7), the selected Latin American countries and the United States share a concern for themes related to social stratification ("social mobility" and "middle class"), sociology of work ("labor market"), and political sociology ("social movement," "public space," and "human rights").

Each national case presents specific bigrams in reference to geographic locations ("buenos aires," "sao paulo," "chilean society," "brazilian society," and "latin america"). It is noteworthy that the bigram "latin america" is also prevalent among the documents with at least one institutional affiliation in Brazil. Brazilian social sciences are often perceived as very provincial, focused on issues specific to Brazilian society and with little intersection with Latin American issues. The frequency of the bigrams in figure 7 suggests otherwise.

In political science (figure 8), the pattern in the frequency of bigrams is close to that of sociology. As for the themes, issues related to party systems, social movements, elections, and international relations permeate all cases under analysis. There remains, however, concern with national societies and/or themes directly related to them (as indicated, in the North American case, by the strong frequency of the bigram "donald trump").

In anthropology (figure 9), the pattern is also very close to that of sociology and political science. However, in all national cases, the presence of bigrams referring to the country itself is more marked, except for the United States, where reference is to the continent ("north america"). As noted above, the Brazilian case has a lower frequency of bigrams related to physical anthropology and archaeology and more related to social/cultural anthropology, an aspect certainly associated with the history of the social sciences in that country. Taken together, the data from the three areas, sociology, anthropology, and political science, indicate that, in the Latin American case, the "parochial" character is highlighted in the conjunction of bigrams referring to geographic locations and bigrams with more general themes—a parochialism that is "national" but also "regional," with clear concerns about Latin America. In the North American case, references to geographical locations of the country itself are less frequent (included in the reference to "north america"), but, as in the Latin American cases, the "parochialism" appears mixed with more general themes ("african american" and "donald trump").

We can further adjust the focus of analysis and detail how the bigrams common or specific to the national cases relate to other bigrams in each social science area. We will use a variation of the word-correlation analysis presented by Julia Silge and David Robinson (2017), this time with bigrams. The procedure begins by indicating the text or text

Table 2. Number of documents by research area (SciELO). The first 30 disciplinary areas with more than 100 documents in the sample.

SciELO categories (research areas)	Number of documents
medicine, general & internal	2,035
education & educational research	1,566
biology	1,390
social sciences, interdisciplinary	1,360
public, environmental & occupational health	1,335
health care sciences & services	1,248
humanities, multidisciplinary	1,181
sociology	1,065
nursing	1,051
food science & technology	924
agronomy	881
surgery	725
cardiac & cardiovascular systems	646
engineering, multidisciplinary	633
economics	614
agriculture, multidisciplinary	609
history	601
dentistry, oral surgery & medicine	599
veterinary sciences	582
anthropology	575
philosophy	564
language & linguistics	556
management	522
psychiatry	515
law	515
health policy & services	510
sport sciences	484
psychology, multidisciplinary	478
agriculture, dairy & animal science	474
communication	469

size that will serve as the context for the extraction of bigrams. In this case, we take the abstracts of each document. We determine that each bigram should have a minimum frequency of twenty repetitions. Next, we highlight those that seem to be, for each subject area, the main bigrams, and from which the bigrams with the highest correlation will be extracted. Unlike previous analyses, which focused only on the frequency of co-occurrence between two words (bigrams), the correlation calculation seeks to identify how the bigrams relate to each other within a broader "textual space"—that is, in the abstract of the documents. In this way, we can analyze not only the semantic relationships between terms but also the degree of "parochialism" they eventually carry and which is revealed in themes transversal to the most different bigrams of disciplinary areas and national cases. To counterbalance the high volume of documents with at least one North American affiliation, we decided to group the Latin American national cases in the following figures. Figures 10 and 11, dedicated to the correlation of bigrams in the area of sociology, illustrate the methodological procedure highlighted above. In the North American case, we can see how race cuts across a series of themes that, when viewed in isolation, might seem to have no association. Except for the "social capital" bigram, the correlation of the main bigrams with bigrams related to the matter of race, ethnicity, discrimination and racial inequality is high. In the Latin American case, the correlation of bigrams points to the significant presence of transversal themes related to social stratification, social mobility, social and economic inequality and social inclusion.

The correlation of bigrams of political science documents (figures 12 and 13) shows a pattern similar to that of sociology. In both the North American and Latin American cases, there is a strong tendency toward studies on national party systems and electoral studies. The "parochialism" becomes more evident when we contrast the cases. In papers with at least one North American institutional affiliation, themes related to party financing and North American public opinion are present. In the Latin American cases, issues associated with dictatorial regimes in the region, democratic institutions, civil society, and economic crises have the highest correlation indexes. It is noteworthy that in the North American case, the theme of human rights displays a high correlation with gender issues and the September 11 attacks, and in the Latin American case with public services, dictatorial regimes, and the Cold War.

For the area of anthropology (figures 14 and 15), we selected bigrams frequently observed in the language of social and cultural anthropology. This criterion had the effect of diminishing the presence of physical anthropology and archaeology, without, however, nullifying it completely, as observed in both the North American and the Latin American case. In relation to other disciplinary areas, it is notable how, in the North American case, anthropology is the least "parochial" and does not clearly present a transversal theme. As for the Latin American cases, we saw earlier that, except for Brazil, anthropology is also very much linked to archaeology or physical anthropology. However, when we select bigrams related to social and cultural anthropology, we observe this influence diminishing, in part due to the strong presence of Brazilian documents in this sample.

TALKING WITH ONE ANOTHER: PAROCHIALISM AT THE LEVEL OF BIBLIOGRAPHICAL REFERENCES

In order to evaluate certain prevailing assumptions, such as that which takes the social sciences from the "Global North" to be more cosmopolitan and tending toward higher levels of generalization and abstraction, we advance the argument that the discussion on the relationship between parochialism and cosmopolitanism in the social sciences must be viewed from different angles or levels of observa-

Table 3. Total documents according to country of institutional affiliation and discipline (WoS and SciELO).

	WoS				SciELO			
	Anthropology	Sociology	Political Science	Archaeology & Evolutionary Biology	Anthropology	Sociology	Political Science	Archaeology & Evolutionary Biology
Brazil	1,896	1,521	1,805	548	3,504	9,139	2,038	489
Argentina	2,207	676	1,372	1,189	1,810	1,338	728	227
Chile	1,619	611	1,256	703	1,421	1,110	619	34
Mexico	1,693	1,004	1,998	520	2,830	4,326	1,632	410
Total	7,415	3,812	6,431	2,960	9,565	15,913	5,017	1,160

Table 4. Statistics with single or multiple countries of institutional affiliation (2002–2021).

Sample	Documents	Documents with incomplete information	New total of documents	SCP	MCP	SCP ratio
USA	146,020	470	145,550	126,683	18,867	0.870374
Brazil	11,193	521	10,672	9,046	1,709	0.847639
Argentina	6,739	825	5,914	5,049	1,083	0.853737
Chile	5,146	189	4,957	3,637	1,380	0.73371
Mexico	8,941	572	8,369	7,154	1,348	0.854821

tion. Parochialism in the social sciences connects to national intellectual traditions and to problematics of local and/or regional context. Moreover, we are proposing here a multiple-perspective analysis of this problem, insofar as the degree and meaning of parochialism in each national case varies according to disciplinary areas (sociology, anthropology, and political science) and according to the unit of analysis used, such as journals, indexed research areas, abstract bigrams, and correlation between bigrams. In this section, we look to the bibliographic references of national samples as another unit of analysis. One of the most widely used techniques for creating proximity and distance relationships among the selected documents is that of "bibliographic coupling" (Garfield 2001). It reveals, through the degree of similarity between articles, measured by sharing bibliographic references, how the documents are distributed along different thematic and/or disciplinary axes. Therefore, bibliographic coupling between two articles occurs when they reference at least one publication in common. Bibliographic coupling thus establishes a connection between two articles when they use the same references (van Eck and Waltman 2010). To prevent the large volume of documents with at least one US institutional affiliation from causing a centripetal effect relative to the remaining documents with other national institutional affiliations, thereby distorting the graphs and metrics to be discussed below, we selected those documents published between 2018 and 2021 for each subject area addressed in this research. For the remaining national sets of documents, we kept the full sample, without applying a temporal filter.

Figures 16, 17, and 18, generated from the software VosViewer (van Eck and Waltman 2010) and Gephi (Bastian, Heymann, and Jacomy 2009), present the bibliographic coupling networks for each subject area—political science, anthropology, and sociology, respectively. For each of them, we use only the "principal component" of the network—that is, the segment that has the largest number of edges (relationships) between nodes (documents). The nodes are colored according to the institutional affiliation of each document in our sample: the United States in purple, Argentina in blue, Brazil in yellow, Mexico in green, and Chile in red. We observe how each network presents its own characteristic of coupling among the documents, forming a gradient from highest to lowest degree of homophily (that is, of relationships among documents that tend to present similar patterns of bibliographic references within each country). At one pole is political science, and at the other, anthropology. The political science network appears to have the highest coupling among the Latin American papers, while the intersection of these papers with those with North American institutional affiliation remains low. In sociology, the documents with different institutional affiliations are clearly distinguishable, with low intersection between national groupings. In political science, there is greater coupling among Latin American papers when compared to the sociology network, while the intersection with papers with North American institutional affiliation remains low. The anthropology network occupies the other pole of this gradient. There is clearly greater coupling between documents with different national institutional affiliations, although the aggregation of national communities is still more or less perceptible. As we have seen in the previous sections, this pattern in the anthropology network is largely due to the influence of physical anthropology and archaeology, areas with great international cooperation among researchers and with strong Latin American ties.

At first, these images suggest a greater degree of densification of the national groups in the sociology network. The images, however, although fundamental to the analysis, do not always clearly translate the structure of the relationships. Table 5, generated with the help of the Xucinet package (Borgatti et al. 2022), presents eight different network metrics (one per row) that allow us to define more precisely the homophily relationships in each network by disciplinary area. The first four rows of the table are devoted to descriptive statistics of the network, calculating (a) number of edges (relations) between documents from the same country (defined in the networks by the colors listed above); (b) number of edges (relations) between documents from countries with different institutional affiliation; (c) number of dyads (document pairs) belonging to the same group of countries of institutional affiliation and that do not have edges (relations) between them; and, finally, (d) number of dyads (document pairs) belonging to different groups of countries of different institutional affiliation and that do not have edges (relations) between them. The remaining metrics (represented by the last four rows of the table) are those that, in different ways, link the first metrics to provide elements for analyzing the networks' homophilic relationships: "%homoph" is the percentage of homophilic relationships—that is, the ratio of the total number of edges between homophilic dyads divided by the total number of areas (a/(a+b)). "EI" is an index of heterophily (b-a)/(b+a), for which -1 indicates perfect homophily and 1 indicates perfect heterophily. "ExpectEI" is related to the "EI" index by offering a reference point of the expected value if there were no homophilic or heterophilic tendencies. Finally, "YulesQ" is a metric for calculating homophily taking into account edge-less dyads ((ad)-(bc))/((ad)+(bc)). When equal or close to 1, it indicates homophilic tendency, and when equal or close to -1, it indicates heterophilic tendency. The main difference with the "EI index" is that "YulesQ" is insensitive to variations in the number of edges. When we analyze these metrics together, we see, as highlighted from the image analysis, that the bibliographic coupling networks of the political science and sociology areas show similar tendencies in weaving homophilic relationships between papers that have the same country of institutional affiliation. The sociology network has the highest homophilic tendency, with "EI index" of -0.10, having the largest difference between "EI index" and "ExpectEI," of 0.44, and "YulesQ" of 0.43. Although with a higher "%homoph" (0.67 percent) than sociology, the political science network shows a slightly lower trend of homophilic relationships, with the lowest "EI index" among the fields, -0.35, and "YulesQ" of 0.39. The anthropology network, as could already be anticipated from previous

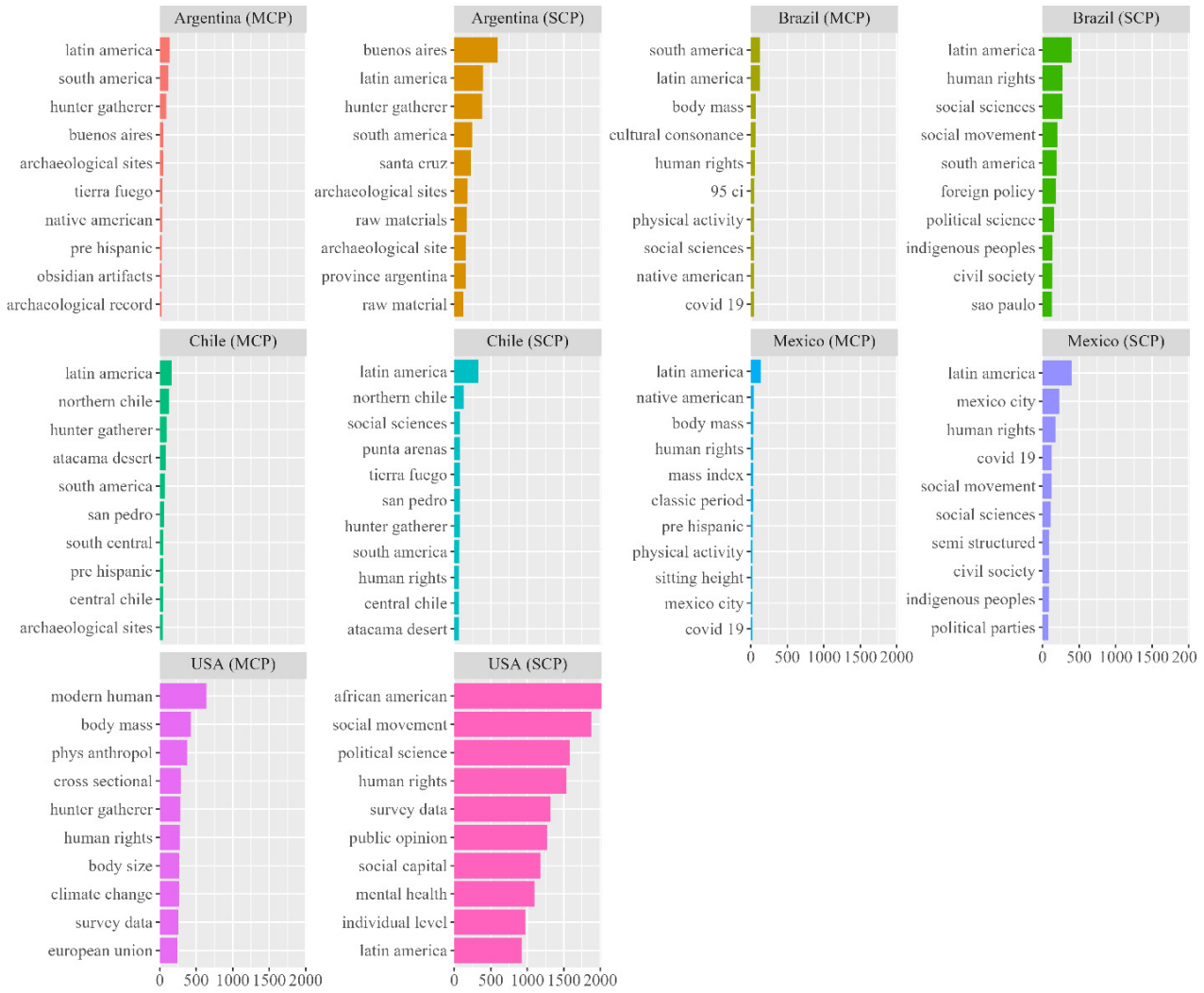

Figure 6. Bigrams extracted from document abstracts MCP and SCP.

Source: WoS, created by the authors

text-mining analyses, has the lowest homophilic tendency, with "YulesQ" of 0.16 and only 0.12 difference between "ExpectEI" and "EIindex."

In the previous section, we discussed via frequency of terms how research topics reveal, through mentions of historical moments and contexts more specific to national and/or regional cases, the parochialism present in both US- and Latin American-affiliated documents. In this section, we have added a new dimension to the analysis by focusing on bibliographic references. At this level, parochialism translates into significant tendencies to establish homophilic relationships; that is, documents with at least one common national institutional affiliation tend to present a similar citation profile. As in the case of the analysis of frequency and correlation of bigrams, the parochialism at the level of bibliographical references also varies according to disciplinary areas, with sociology at the pole with the highest degree of homophily; anthropology at the opposite pole, with a lower degree of homophily; and political science between the two poles, closer, however, to sociology.

FINAL CONSIDERATIONS

Through a "distant reading" based on scientometric techniques, text mining, and network analysis, we have investigated the meanings and degrees of parochialism in the three main areas of the social sciences (sociology, anthropology, and political science) in documents indexed in the Web of Science platform with at least one author with institutional affiliation in one of four Latin American countries (Argentina, Brazil, Chile, and Mexico). The comparison also included papers with at least one institutional affiliation in the United States, in order to better qualify the "parochial" sense often attributed to the Latin American social sciences. Our main findings indicate that (a) "parochialism," understood as the concern of researchers with problems or issues related to national society, is not something exclusive to Latin American social sciences; (b) when we analyze "parochialism" in relations between researchers having in common the country of institutional affiliation of the cases analyzed, we see that proportionally, there are no great differences between cases, revealing that the "endogeneity" of coauthorship—that is, institutional collaboration in the

Figure 7. Bigrams extracted from document abstracts. Sociology (Latin America and US).

Source: WoS, created by the authors

same country—is not only a characteristic of Latin American social sciences; (c) when we analyze "parochialism" at the level of texts, in this research highlighting above all the frequency and correlation of bigrams, we see that, contrary to what is generally assumed, in documents with at least one North American institutional affiliation, themes related to national society also appear. In the North American case, the parochialism revealed by the bigrams is markedly "national," while in the Latin American cases, the national parochialism is as frequent as the regional one—that is, the one that refers to Latin America itself. Finally, (d) we identify that the parochialism in the cases analyzed here is also evident at the level of the bibliographic references of the sample documents. In other words, the documents tend to have a high index of homophily, citing bibliographic references common to their national group and having few bibliographic references in common with other national groups.

Although it is a hallmark of the social sciences in general, parochialism continues to be seen in many circles as a characteristic of social sciences in peripheral countries. The data we present allows us to counter this view and indicates that parochialism in the social sciences should not be taken as an index of backwardness or of a purely empiricist science. On the contrary, from the multilevel panorama of parochialism in the social sciences presented here, we have seen that it presents itself with different meanings and degrees in each national case, in each disciplinary area, and according to the unit of analysis used, such as journals, indexed research areas, abstract bigrams, and correlation between bigrams.

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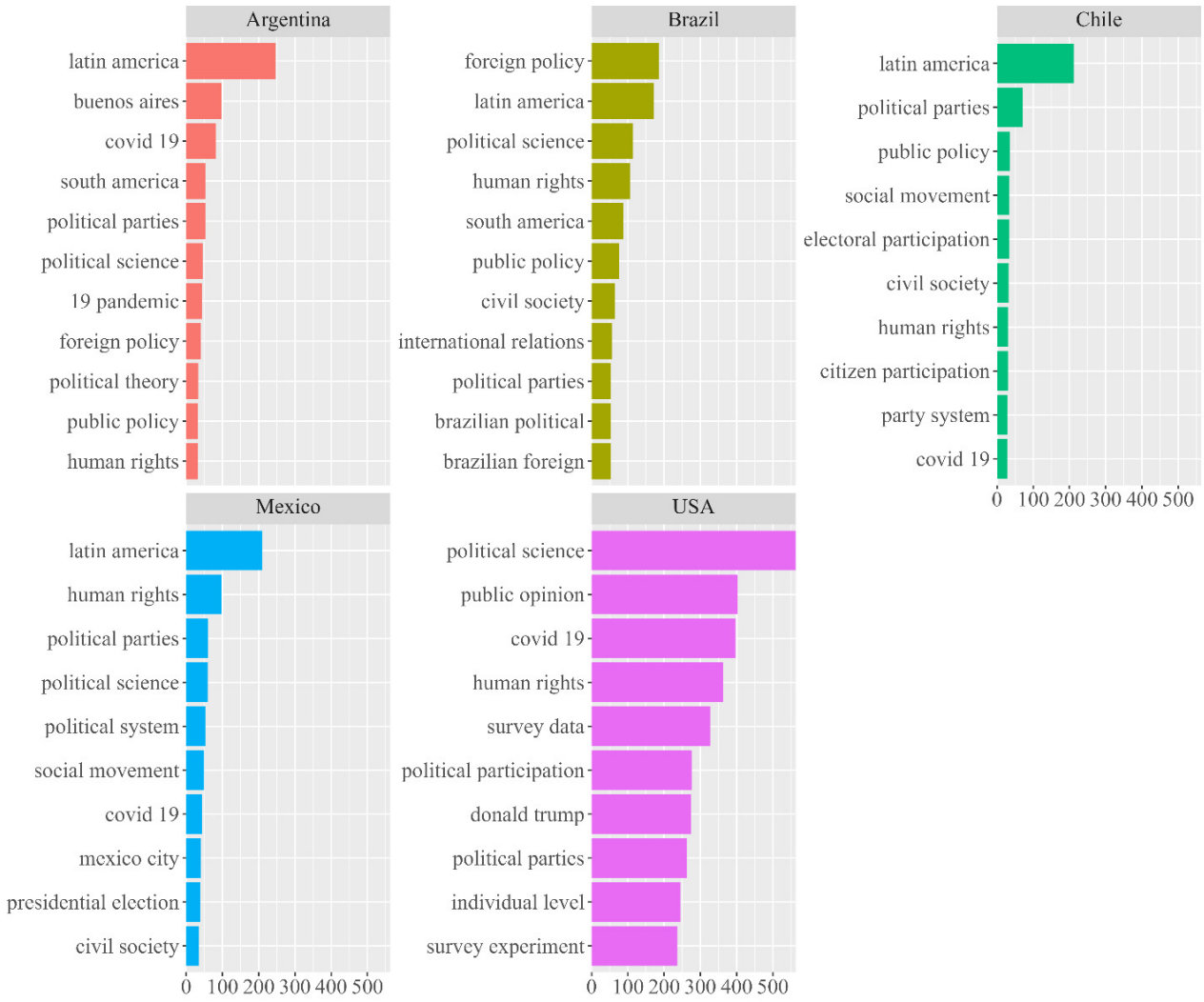

Figure 8. Bigrams extracted from document abstracts. Political science (Latin America and US).

Source: WoS, created by the authors

ogy and Anthropology at the Federal University of Rio de Janeiro (UFRJ). He obtained his master's and doctoral degrees at the PPGSA/UFRJ. He is a Jovem Cientista do Nosso Estado (JCNE/Faperj) and editor-in-chief of the journal *Sociologia & Antropologia*.
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COMPETING INTERESTS

The authors have no competing interests to declare.

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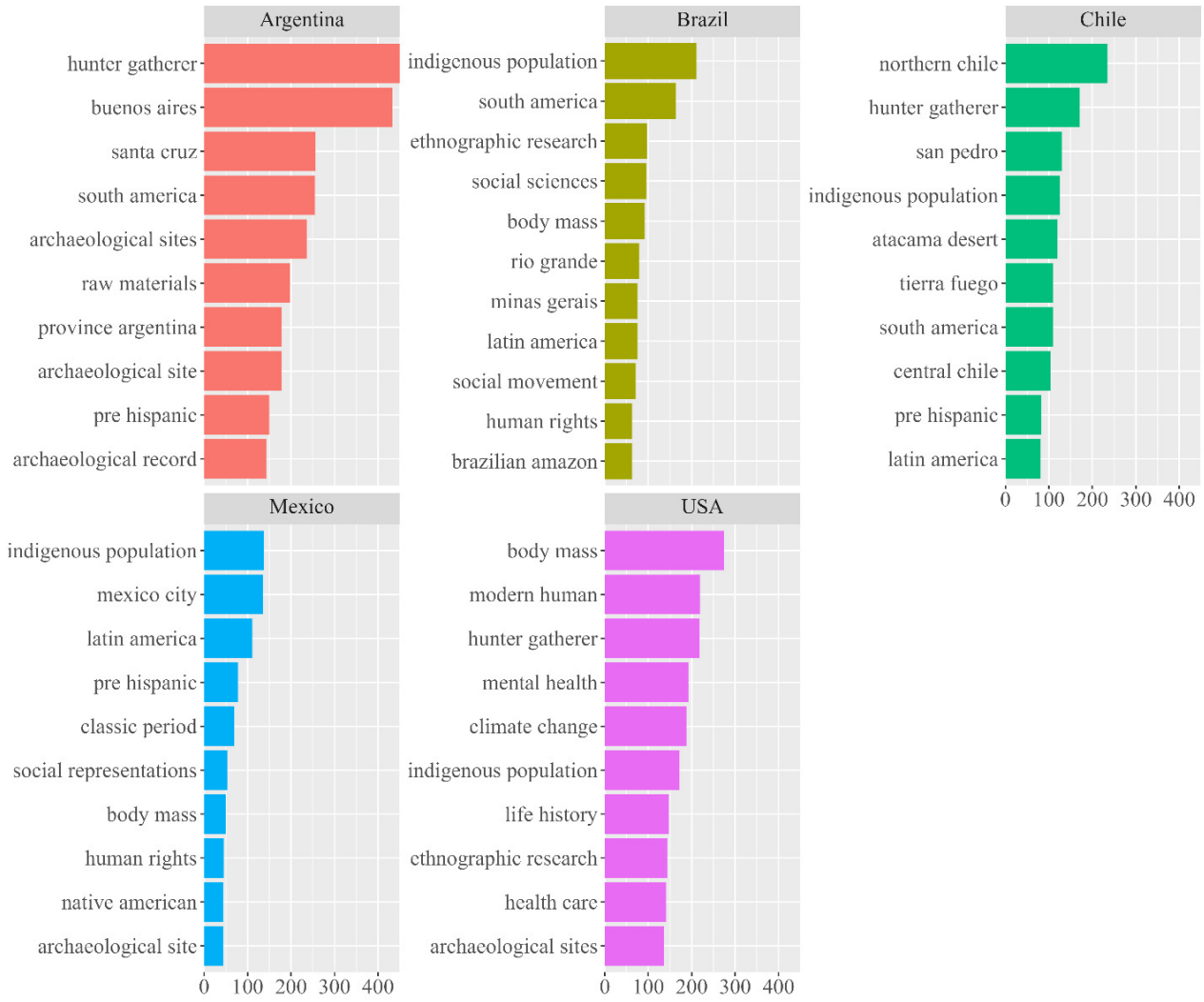

Figure 9. Bigrams extracted from document abstracts. Anthropology (Latin America and US).

Source: WoS, created by the authors

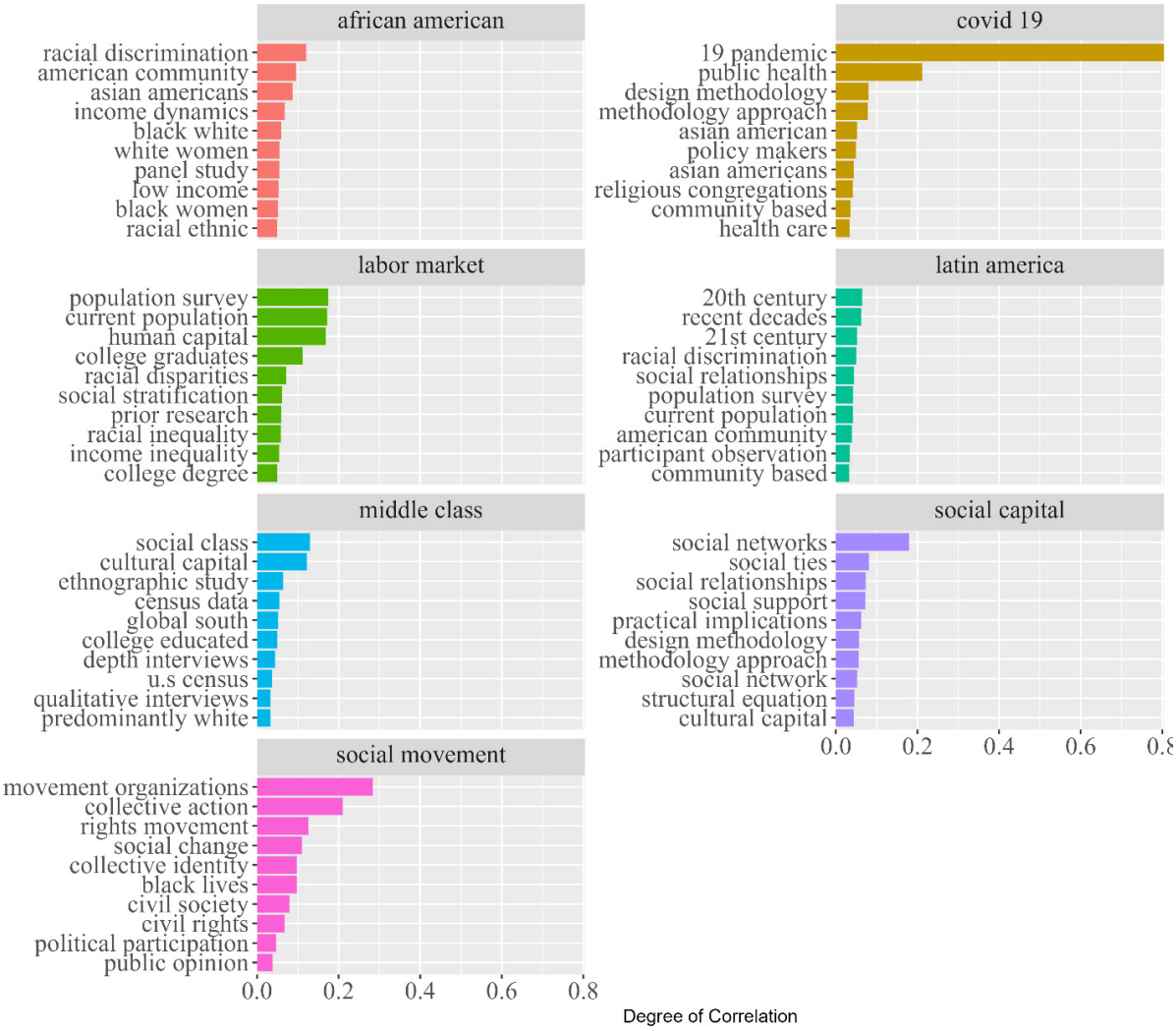

Figure 10. Correlation of bigrams extracted from document abstracts. Sociology (US).

Source: WoS, created by the authors

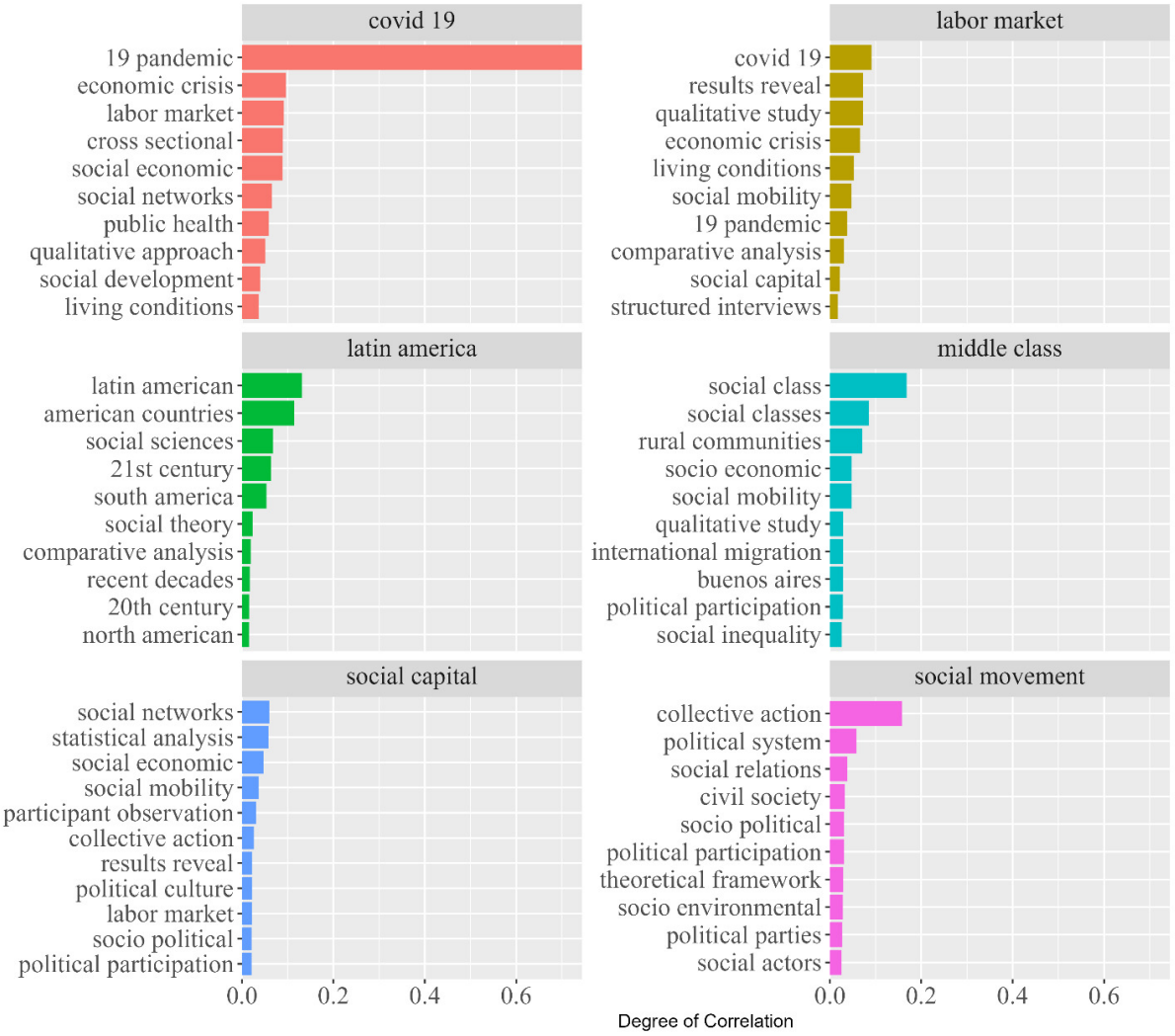

Figure 11. Correlation of bigrams extracted from document abstracts. Sociology (Latin America).

Source: WoS, created by the authors

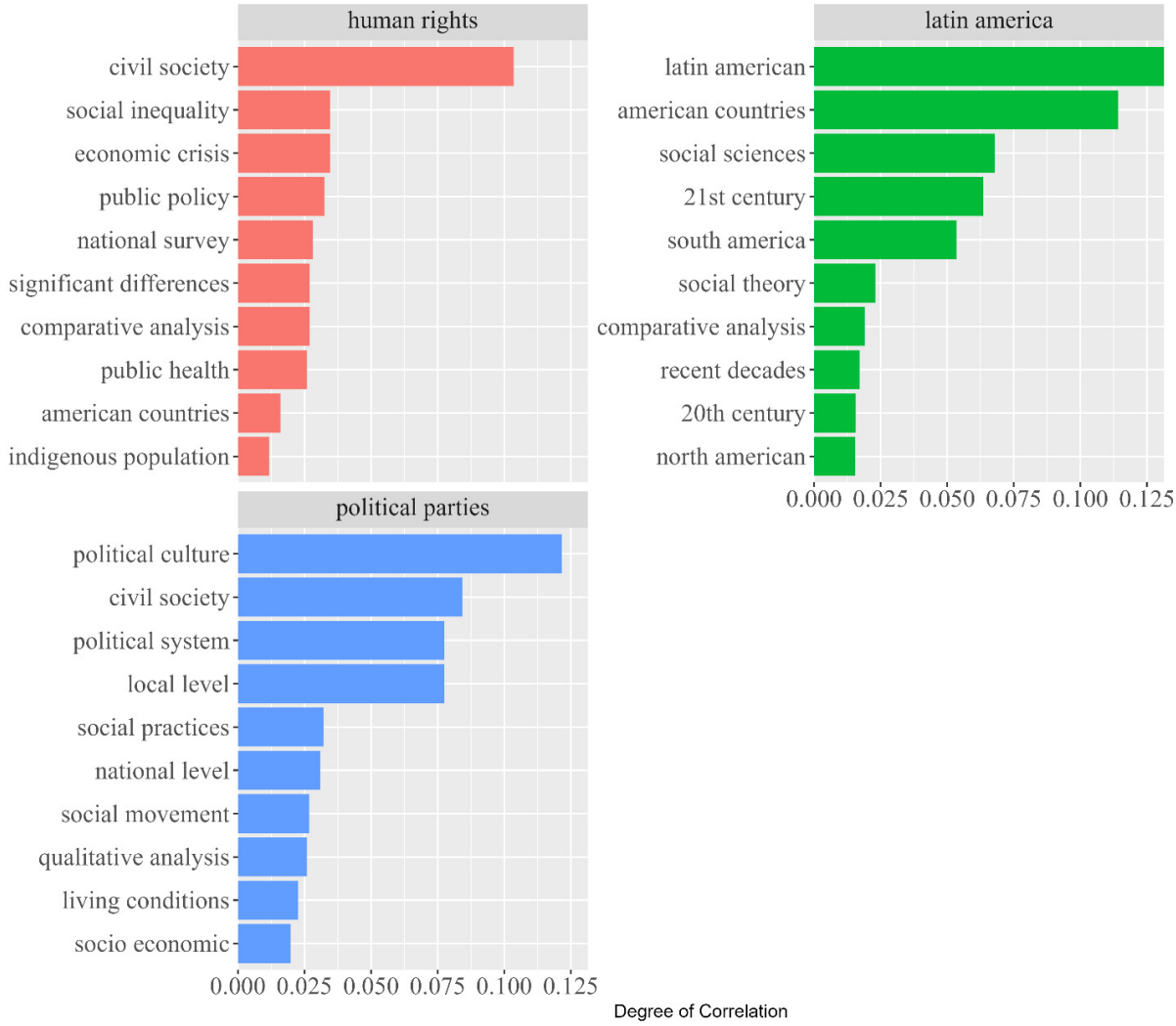

Figure 12. Correlation of bigrams extracted from document abstracts. Political Science (US).

Source: WoS, created by the authors

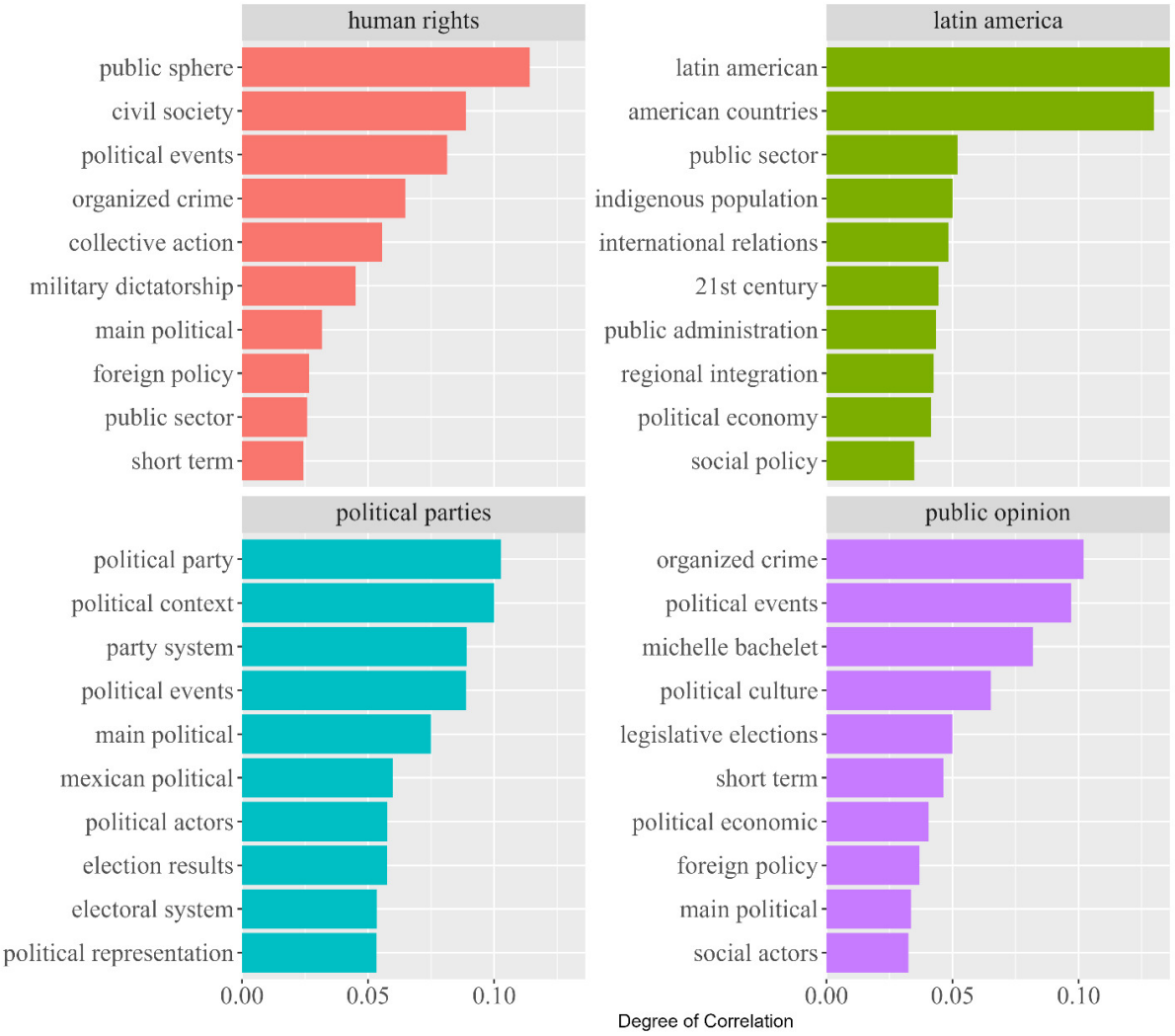

Figure 13. Correlation of bigrams extracted from document abstracts. Political science (Latin America).

Source: WoS, created by the authors

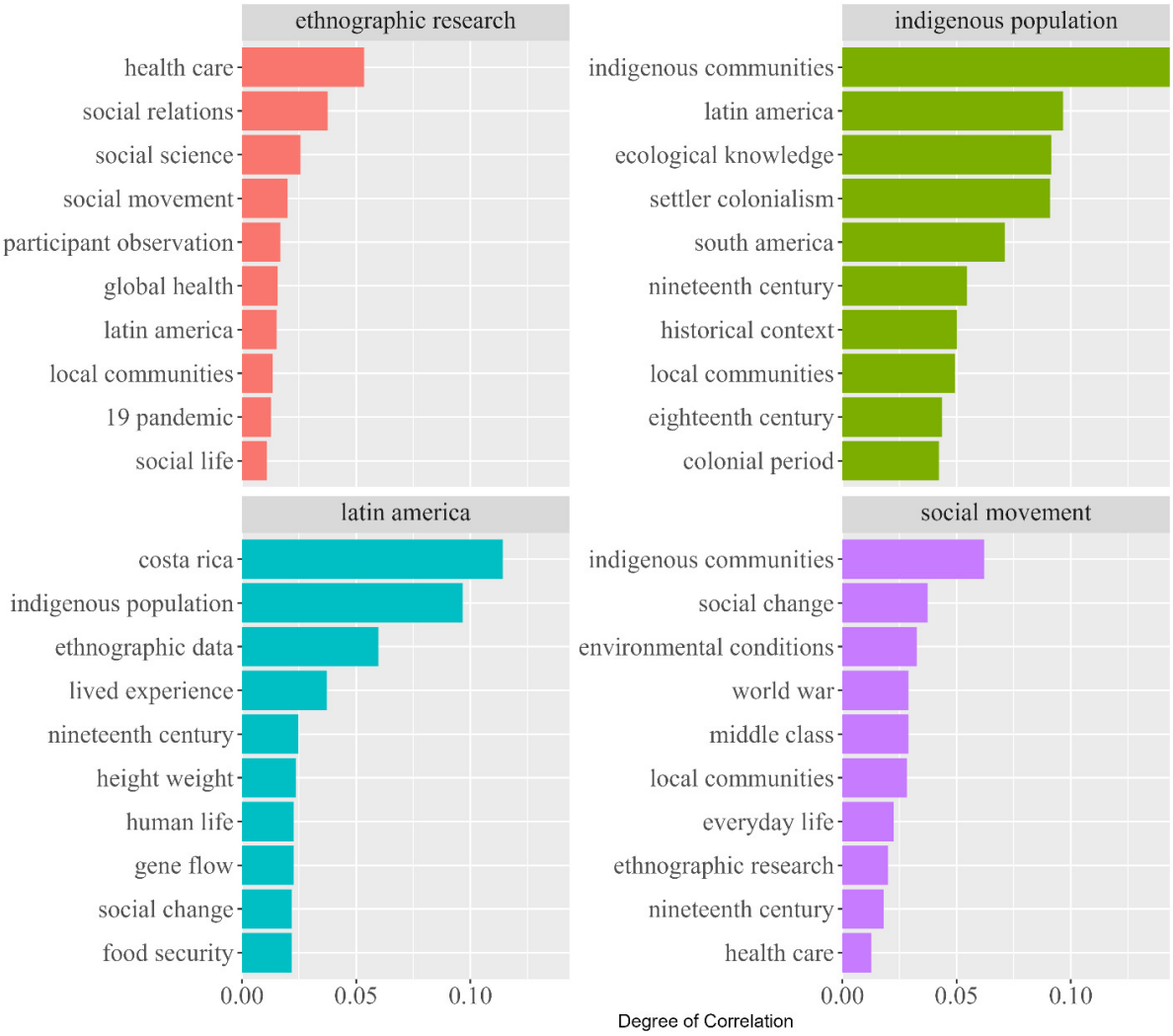

Figure 14. Correlation of bigrams extracted from document abstracts. Anthropology (US).

Source: WoS, created by the authors

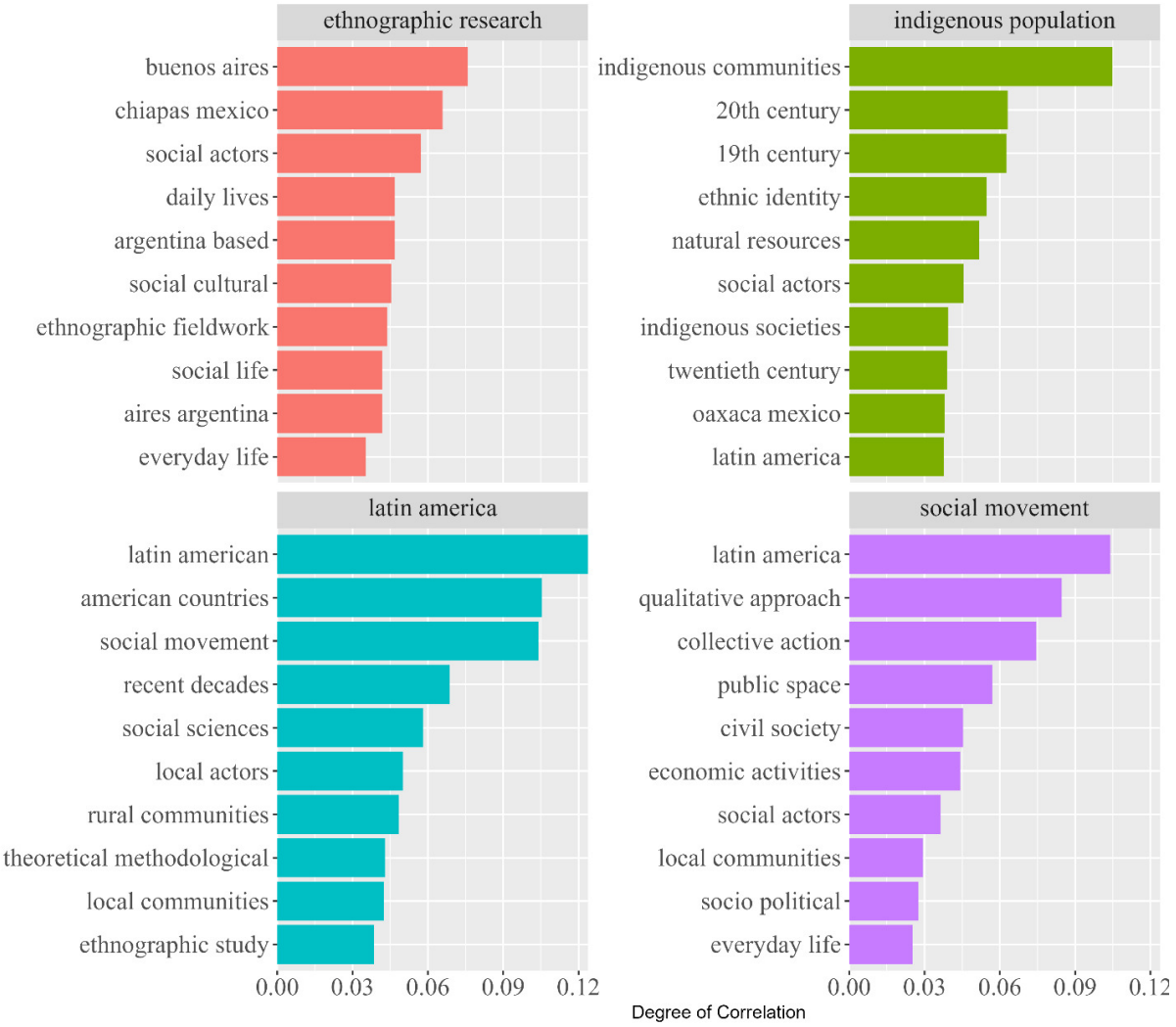

Figure 15. Correlation of bigrams extracted from document abstracts. Anthropology (Latin America).

Source: WoS, created by the authors

Figure 16. Bibliographic coupling network by country of institutional affiliation (political science).

Figure 17. Bibliographic coupling network by country of institutional affiliation (sociology).

Figure 18. Bibliographic coupling network by country of institutional affiliation (anthropology).

Table 5. Cross-country homophily calculation table for bibliographic coupling networks of each disciplinary area.

	Political Science	Anthropology	Sociology
Number of edges connecting documents from same country	2,583,644.00	3,728,189.00	1,129,507.00
Number of edges connecting documents from different countries	1,250,267.00	8,630,802.00	922,943.00
Number of homophilic dyads without edges	129,184,320.00	106,748,693.00	67,617,063.00
Number of heterophilic dyads without edges	142,956,925.00	339,515,956.00	139,089,639.00
%homoph	0.67389253	0.3016580	0.5503213
EI index	-0.34778507	0.3966839	-0.1006426
ExpectEI	0.04507372	0.5182242	0.3413791
YulesQ	0.39150260	0.1574925	0.4313985

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