

SOCIO-HISTORY OF STATISTICS ON LATIN AMERICA: A REVIEW

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Editions de l'E.H.E.S.S. | « [Histoire & mesure](#) »

2018/2 Vol. XXXIII | pages 13 - 32

ISSN 0982-1783

Available online at :

https://www.cairn-int.info/article-E_HETM_332_0013--socio-history-of-statistics-on-latin.htm

How to cite this article :

Hernán Otero, « Socio-history of statistics on Latin America: A review », *Histoire & mesure* 2018/2 (Vol. XXXIII), p. 13-32.

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Socio-History of Statistics on Latin America: A Review

La socio-histoire des statistiques en Amérique latine : état de la recherche

Hernán Otero



Electronic version

URL: <http://journals.openedition.org/histoiremesure/7934>

DOI: 10.4000/histoiremesure.7934

ISSN: 1957-7745

Publisher

Éditions de l'EHESS

Printed version

Date of publication: 31 December 2018

Number of pages: 13-32

ISBN: 978-2-7132-2753-0

ISSN: 0982-1783

Electronic distribution by Cairn



CHERCHER, REPÉRER, AVANCER.

Electronic reference

Hernán Otero, « Socio-History of Statistics on Latin America: A Review », *Histoire & mesure* [Online], XXXIII-2 | 2018, Online since 02 January 2022, connection on 14 October 2019. URL : <http://journals.openedition.org/histoiremesure/7934> ; DOI : 10.4000/histoiremesure.7934

Socio-History of Statistics on Latin America **A review**

Hernán OTERO *

Abstract. The major developments in the study of the history and sociology of statistics on Latin America since the late 1990s are largely unknown to European or American readers, mainly due to language barriers. Based on this observation, this article aims to provide a global view of this field of study through the presentation of two basic genres: studies devoted to the producers of numbers (with emphasis on national statistical systems) and those focusing on statistics in themselves (analysis of concepts, categories, knowledge, etc.). In both cases, special attention is paid to the differences between Latin America and the Western industrialised countries. Finally, existing research is reviewed and some issues concerning the future agenda are examined.

Keywords. public statistics, statistical categories, historiography, Latin America

Résumé. La socio-histoire des statistiques en Amérique latine. État de la recherche. L'histoire et la sociologie de la statistique en Amérique latine ont connu un développement important depuis la fin des années 1990, dont le lecteur européen ou nord-américain est peu informé pour des raisons essentiellement linguistiques. En partant de ce constat, le texte a l'objectif de fournir une vision d'ensemble de ces domaines académiques à partir de la présentation de deux genres d'études : les travaux consacrés aux producteurs de données chiffrées (en particulier, les systèmes nationaux de statistiques) et ceux consacrés aux outils et usages de la statistique en tant que tels (analyse des concepts, catégories, savoirs, etc.). Dans les deux cas, une attention particulière est portée aux différences entre l'Amérique Latine et les pays occidentaux. Cette contribution s'achève par un bilan de la production historiographique et l'évocation de quelques défis pour le futur.

Mots-clés. statistique publique, catégories statistiques, historiographie, Amérique latine

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This article reviews existing research on the history and the sociology of statistics in Latin America, research that, it is argued, is much richer and more varied than might be imagined a priori. Despite their specificity and relatively recent emergence, the production and uses of numbers in Latin America have attracted considerable attention.

There are many ways of conceiving the socio-history of statistics. This article follows an inductive perspective by placing existing research as the starting point. This research has expanded significantly since the late 1990s thanks to both international and national factors. Concerning the former, the crisis of the paradigms that had, until then, structured the social sciences – such as Marxism, structuralism and functionalism – gave rise to what Desrosières defined as “‘denaturalisation’ and ‘deconstruction’ enterprises”, of recurrent use in social analysis since the 1980s.¹ Regarding national events, the end of the military dictatorships in many Latin American countries (Argentina in 1983, Brazil in 1985 and Chile in 1990) paved the way for the renewal of universities, the rebirth of research, and the training abroad of academics. Influenced by these two types of events, the emergence of Latin American research on the history of statistics – promoted, above all, by the academic sphere – started quite early in relation to Europe.

The text follows a three-stage approach in order to examine researchers’ themes, perspectives and initial questions. It begins by examining the studies focusing on producers and on the contexts in which statistics were generated. Second, it analyses the studies devoted to statistics and statistical knowledge. These two categories of research can be conceived as ideal types since, in practice, authors engage simultaneously, to a greater or lesser extent, with both dimensions. Finally, the article evaluates the strengths, weaknesses and challenges of this field of study in Latin America.

Three essential remarks must be considered beforehand. First, while the opening section of the paper highlights elements that are similar across the whole of Latin America that favour the comparison with Western industrialised countries, the second part proposes a more detailed analysis of national experiences. This distinction derives from the greater number of existing studies on the second of the aforementioned aspects, for which abundant historical resources are available. Another factor, as explained below, is that the investigations were initiated asking questions specific to the disciplines constituting each author’s academic background. As a consequence, the

This paper was originally presented as a special address at the “Le chiffre et la carte” colloquium (Montreal, 21-23 September, 2017). I am grateful for the comments received on that occasion, in particular those of Jean-Pierre Beaud, Morgane Labbé and Claudia Damasceno, as well as for the observations of Cecilia Lanata Briones on a previous version of this work and of the anonymous referees of this journal.

1. A. DESROSIÈRES, 1993.

reconstruction of public statistical institutions tended to be, with few exceptions, an add-on rather than the ultimate aim of the enquiries. For this reason, the second and third sections of this article not only address different genres or ways of making the history of statistics but, because of the existing output, they also develop from a general to a particular vision.

Second, although desirable, the review of authors and their research cannot be exhaustive, given the difficulty of obtaining information on all existing studies on every Latin American country, and due to the vast amount of research done in recent years. Examples of the increasing research production and interest in the topic include a series of international meetings (Rio de Janeiro, 2009; Salvador de Bahía, 2010; Montreal, 2017)², as well as the creation in 2011 of an organisation (the *Asociación de las Américas para la Historia de la Estadística y el Cálculo de las Probabilidades*) and of a journal, *Estadística y Sociedad* headed initially by Natalia de Lacerda Gil and currently by Laura Cházaro and Ana Medeles.

Finally, and undoubtedly more importantly, this article places particular emphasis on the specificities of the Spanish or Portuguese speaking Latin American countries, by comparing their trajectories with that of Western industrialised countries, mainly those of Europe, the United States and Canada.

1. The producers of statistics and the contexts of production

The first type of existing research examines the producers of statistics, defined as the agencies and individuals who “manufacture/produce the figures”³ – to paraphrase the title of the recent book by Hernán González Bollo; the contexts in which they work, and where their work is conducted. This crucially important aspect refers to the concept of statistical regime which comprises – according to the precise definition developed by Jean-Pierre Beaud and Jean-Guy Prévost⁴ – the set of institutions, norms and practices that determine the production of numbers.

Although both the private and public sectors can generate numbers that aim to portray social reality, most of the statistics in Latin American countries are produced by the state. Far from arbitrary, and despite the existence of very interesting individuals (generally notables, many of them foreigners during

2. The papers presented in Rio de Janeiro were compiled in N. SENRA & A. CAMARGO, 2010, and those from the meeting held at Salvador de Bahía can be found in C. CARVALHO JR. et al., 2011. Other collaborative publications include the dossier coordinated by H. Otero, 1999 containing papers by Alain Desrosières, Éric Brian and Jean-Pierre Beaud, as well as the special issue of *Histoire & Mesure* on Latin America with an introductory article by J.-P. BEAUD & C. DAMASCENO, 2017.

3. H. GONZÁLEZ BOLLO, 2014.

4. J.-P. BEAUD & J.-G. PRÉVOST, 2010.

the nineteenth century), private statistics in Latin America are less abundant than in Europe. For example, contrary to the situation in Europe, scientific societies had little influence, and specialised publications were very few in number, as shown by Luc Berlivet.⁵ Although there are examples of local scientific societies (for example geographical societies in Brazil and Mexico), little progress has been made regarding their study. The greater weakness of private statistics, again relative Europe, constitutes the first difference with respect to the Western industrialised countries. In these latter nations, moreover, the state is, and has been, a more powerful actor that is put to the test by a private scientific world of great wealth and dynamism that, at times, has successfully challenged its statistical output.

The institutional history approach – on which research is generally based – has reconstructed the legal frameworks, as well as the trajectory of public sector offices and agencies, and of individual actors. It has also made it possible to evaluate state agencies in terms of their administrative capacities as examined by Hernán González Bollo. He differentiates between strong and weak agencies on the basis of a set of relevant variables: the ability to pass laws, the internal specialisation of specific tasks, the evolution of employee numbers and of the allocated budget, the organisation of successful surveys and censuses, the publication of official reports, and the specific advice given to executive or congressional committees.⁶

This dual categorisation (weak/strong) of the statistical institutions has also been useful for comparing countries. The cases of Brazil, Argentina and Mexico suggest an earlier development of stronger statistical systems than those of Chile and Colombia, where institutions were established later and were weaker. Victoria Estrada Orrego's recent doctoral thesis, for example, illustrates the enormous difficulty of building statistical knowledge in Colombia due to the weak, low-qualified and highly politicised state bureaucracy and the lack of economic resources in a context of a fragile central state constantly searching for legitimacy.⁷ Something generally similar happened in Chile, as explored by Andrés Estefane.⁸

The context in which public statistics were produced also includes aspects of legal history. This history is undoubtedly essential, but also problematic. While the laws behind the creation of agencies and census taking are usually divided into specific time periods based on conventional economic development models or political periods, they are poorly suited to the measurement paradigms, which develop slowly and are dependent on long-term factors. On the other hand, and following the analogies with population policies, the

5. L. BERLIVET, 2015.

6. H. GONZÁLEZ BOLLO, 2014, pp. 80-81.

7. V. ESTRADA ORREGO, 2015.

8. A. ESTEFANE, 2012; id., 2016.

differences between legal frameworks and measurement practices are an essential element to be considered in any process of statistical data collection. Studies on this topic in the Latin American context are still insufficient. Nonetheless, it can be hypothesised that the distance between general policies (whether population, economic or other) and the use of statistics as a basis for such policies (certainly a constitutive trait of the statistical imaginary of the modern world) is a second difference with respect to the trajectory followed by Western industrialised countries. Evidence of this, for example, is the censuses that were developed but not implemented, as well as the brief existence of many statistical agencies.

In any case, the history of the creation of statistical offices shows that the process of state construction was complex. Thus, the offices' trajectory cannot be one of linear progress, a frequent characteristic of the stories told by the statistical institutions themselves. Notwithstanding the mistakes made and the frequent institutional setbacks, the existing research highlights the birth of a specialised statistical bureaucracy that, based on the macro-management statistical regime (circa 1920-1940), gave rise to state experts and a largely self-contained field of study. However, this field has limited connections to the overall history of statistics. Thus, the research on Latin America focuses heavily on the analysis of bureaucracies linked to social control.

According to a widespread process observed for Western statistics, the history of the producers of figures is much better known for its early years or, to refer again to the periodisation of Beaud and Prévost, for what they call the "regime of statistical nationalisation" (1840-1860 to 1920-1940). In Latin America, this coincides with the period defined as that of "author statistics" as opposed to the anonymous statistics of the following period.⁹ Indeed, numerous studies include aspects of the history of the most renowned Latin American statisticians of that period. Unfortunately, the great majority of them follow the classic model of the great-man biography instead of being intellectual biographies or professional prosopographies. This weakness is largely attributable to the relative absence of primary sources, an endemic characteristic of Latin American studies. The subsequent period, which begins roughly in the aftermath of the Great War, is characterised by the formation of anonymous state bureaucracies and by the greater influence of international coordination, following the precepts of the League of Nations, the International Labour Organisation, etc. This stage has received less attention precisely because the opacity of anonymity has led researchers to focus more on production and output rather than on authors/producers. An interesting exception is Jorge Pantaleón, who analyses, among other issues, the role of economists as experts in planning and producing figures during the first half of the twentieth century.¹⁰

9. H. OTERO, 2006, pp. 217-218.

10. J. PANTALEÓN, 2009.

In spite of these difficulties, the existing research has generated precise, detailed knowledge covering a long period on some statistical systems, such as those of Argentina, Chile, Mexico and, above all, Brazil, thanks to studies generated both in academia and “in-house” by the institutions themselves. However, interesting differences exist. In Argentina the production has been basically academic. The histories written in-house have been, until recently, scarce and superficial.¹¹ For Brazil, conversely, the monumental study by Nelson Senra for the period 1822-2002 in the framework of his work at the Brazilian Institute of Geography and Statistics (IBGE) is a history that is an “insider’s” history of the institution but also, at the same time, has strong links with the academic world, as shown by the recent thesis of Alexandre Camargo, heir of that dual tradition.¹² The Mexican case appears to lie between these two traditions.¹³

Statistical institutions do not exist or function in a vacuum. They are articulated, in a complex and sometimes contradictory manner, with a general background of broad social and political demands. This feature, strongly developed in the Latin American case, includes several aspects. First, there has been resistance to statistics, especially during the nineteenth century. Opposition to population censuses in particular, but also to sectoral surveys or even civil registration of vital events,¹⁴ arose among specific subpopulations (for example, the passive opposition of indigenous peoples of some regions to the Argentine censuses of 1895 and 1914), among large corporations (such as industrialists and large landowners) or political groups. The most outstanding case, in terms of its consequences and the studies it has generated, is Parliament’s opposition both to census taking and to the approval of the official census figures, of which the Argentine case is a remarkable, but by no means unique, example.¹⁵ The resistance was to statistical surveys and not to quantification per se, since there are no studies for Latin America (an absence that is probably an indicator of the marginality of the topic) on the theoretical or intellectual resistance to statistics as analysed by Ian Hacking for Europe.¹⁶

This resistance highlights the importance of the autonomy/dependence dichotomy of a statistical institution in relation to the government at different moments in time. This is a crucial characteristic of Latin American history (and certainly beyond it), since it is as much of a factor (or perhaps a more interesting one) than the centralisation/decentralisation dichotomy of national statistical systems. This last dyad has more or less monopolised research,

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11. INDEC, 1983. An exception to this generalisation is the work of G. MASSÉ, 2003.
 12. N. SENRA, 2006-2009; id., 2010; A. CAMARGO, 2016.
 13. INEGI, 2009.
 14. An example, among many others, can be found in M. LOVEMAN, 2007.
 15. Regarding the Argentine case see H. GONZÁLEZ BOLLO, 2010.
 16. I. HACKING, 1990, chap. 17.

which, in turn, suggests a certain evolutionary vision of the construction and trajectory of the state. Little is known, however, about the centralisation of Latin American statistical systems, with the exception of Claudia Daniel's recent illuminating comparison between Argentina and Brazil.¹⁷ Even though both countries undertook similar reforms during the post-war period, centralisation was more successful in Brazil due to its greater long-term policy continuity, but above all to the existence of scientific networks and aid policies, both domestic and international. All of this was less substantial in the Argentine case. As Camargo suggests, the integration of categories of professionals (sanitarians, educators, economists, according to the historical period) within state bureaucracy is a crucial first step for developing comparative typologies to examine the relationship between statistical apparatuses and society in each national case.¹⁸

Another essential aspect is the relationship between the history of political regimes and of statistical production. This viewpoint has provided good insights in the European case, as illustrated by the comparison between democracies and totalitarian regimes, particularly the two great laboratories of the twentieth century that were Nazi-fascism and communism. The equivalent comparison in Latin America between democratic periods and dictatorships is possible, of course, but it is relatively less meaningful for various reasons. In the first place, dictatorships were not totalitarian regimes in the strict sense of the term, but forms of authoritarianism with much lesser capillary impact on society and on state departments/agencies, including statistical offices. Second, the military periods (except for the last cycle of coups d'état in the 1970s) shared common aspects with democratic regimes on many levels, particularly regarding developmentalism. Finally, democratic governments, during both the nineteenth and the twentieth centuries, also interfered negatively on many occasions. The most recent case is the *de facto* intervention of Argentina's National Institute of Statistics and Censuses (INDEC) in 2007 to influence the consumer price index. In short, and this is the third difference with respect to European studies, during the twentieth century the effects of breakdown in the democratic order on the autonomy of statistical institutions were much less relevant in Latin America, both in the institutional sphere as well as in the measurement paradigms. Undoubtedly, interesting comparisons could be made with European authoritarian regimes (such as Franco's Spain and Salazar's Portugal) that could also take into consideration the historical, linguistic and cultural ties linking the Latin American countries with their former metropolises.¹⁹

17. C. DANIEL, 2017.

18. A. CAMARGO, 2016.

19. For example, C. IPSEN, 1996; M. MESPOULET, 2001; A. TOOZE, 2001; J.-G. PRÉVOST, 2009. For the Spanish case see F. CELESTINO REY, 2006.

2. Statistical studies and reports

The second genre of research on the socio-history of statistics on Latin America examines statistical studies and reports in themselves. Starting from the well-known idea that statistics stand at the crossroads between the administrative and political field and the scientific arena, this second group of studies analyses the internal logic of data production, disregarding, to varying degrees, the context in which the numbers were produced. They make use, explicitly or implicitly, of concepts such as the statistical chain,²⁰ whose simplified version includes the enumerated/enumerator relationship; the choice of units of analysis, variables and categories; the criteria for the construction of classifications or nomenclatures; the analysis of statistical tables; and the discursive interpretation of the data or, as Passeron would say, “what a statistical table says and what is said of it”.²¹

This genre, referred here as conceptual history, is the inverse of the previous one since the essential elements are the statistical studies themselves and their internal categories rather than the authors or the context in which the figures are produced, despite both elements being inseparable. For this second type of studies, statistical reports and research are sources that do not solely provide data for the study of reality. They are primarily sources that illuminate, following Alain Desrosières, the “consensus and controversy structures” and the “conventions of equivalence” that make the measurements hold.²² These studies adopt a constructivist perspective (epistemological constructivism but not necessarily ontological) which has the advantage of mitigating any sharp opposition between measures and interpretation.

This genre gives priority to the construction of concepts and notions, among which the concept of nation must first be mentioned. These enquiries follow the well-known work of Benedict Anderson, who briefly develops the theme.²³ Indeed, the ways in which the nation was built during the regime that Beaud and Prévost name – precisely – as “statistical nationalisation” received significant attention, as shown by the work of a wide range of authors. Leticia Mayer and L. Arrijoja Díaz Viruell analyse Mexico, although they use the concept of the imaginary. Tarcisio Botelho and Alexandre Camargo focus on Brazil. Camargo refers to the “symbolic formation of the nation”, while Andrés Estefane addresses the “process of social construction of the nation”

20. D. MERLLIÉ, 1989.

21. J.-C. PASSERON, 1991.

22. A. DESROSIÈRES, 1993.

23. B. ANDERSON, 1983, pp. 163-185.

for Chile. Hernán Otero's book on Argentina posits that census statistics provide a means to develop the genealogy of the nation.²⁴

There is no need to emphasise here the relevance of the concept of nation for nineteenth century European statistics, given that the continent served as the intellectual matrix for other regions. The importance of this process was also crucial for Latin American countries after gaining independence from their metropolises, for at least two reasons. On the one hand, the new Latin American states that emerged from the exhausting cycle of independence and civil war had to justify the existence and continuity of countries that, unlike Europe, had been colonies for three long centuries. On the other, despite the homogeneity produced by the long colonial past (two empires of Iberian origin, two relatively similar official languages, and a single official religion), these populations were very heterogeneous in socio-ethnic and racial terms. This was due to the pre-existence of indigenous peoples, forced immigration of black slaves (of which Brazil is obviously the emblematic case), and European immigration, especially when it became massive in the mid-nineteenth century. Although ethnic heterogeneity is far from an exclusively Latin American issue – analogous discussions have taken place in the United States and in Europe²⁵ – it assumed specific forms in Latin American countries.

The importance of the idea of nation as an essential concept of these studies explains the centrality given to population censuses and ethnic or socio-racial statistics, both in the past and in current statistical regimes. Latin American countries have imported the Anglo-Saxon model of statistical ethnicisation promoted by international organisations like the United Nations, the World Bank, the International Labour Organisation, and seconded by private groups.²⁶ Although this ethnicisation has laudable explicit objectives, it is striking that its adoption has occurred without further discussion, unlike the fierce debates that have taken place in other countries, especially in France.²⁷

In addition to the nation, race and ethnic groups, other concepts have received the attention of researchers, such as the cost of living, a central theme of Cecilia Lanata Briones' recent PhD thesis at the London School of Economics. Her suggestive three-step methodology –deconstruction of the indices used in the past, construction and reconstruction– examines the

24. T. BOTELHO, 1999; L. MAYER, 1999; A. ESTEFANE, 2004; H. OTERO, 2006; L. ARRIOJA DÍAZ VIRUELL, 2016; A. CAMARGO, 2016.

25. See, for instance, the special issue of *Critique internationale* edited by M. LABBÉ, 2009 as well as N. RANERAD, 2010.

26. In many countries there was in fact a re-ethnicisation of statistics that implies, in some sense, a return to colonial statistics. The literature on this subject is vast. See, for example, P. SCHOR, 2009 for the United States of America and L. ANGOSTO FERRÁNDEZ & S. KRADOLFER, 2012 and M. LOVEMAN, 2014 for Latin America.

27. See, for instance, E. MAULIN, 2009 and H. LE BRAS, 2010.

role played by economic policy in the elaboration of price indices.²⁸ Along the same lines, the studies of national accounts, like the one published in the special issue of *Histoire & Mesure* on Latin America, should be taken into consideration.²⁹ Additional examples of these approaches concern the concepts of poverty observed using the indicator of unsatisfied basic needs;³⁰ the patriarchal preconceptions of the measurement of female employment in Latin America;³¹ and, more recently, analyses of the categories and nomenclatures of age and the elderly used in the Argentine censuses of the period 1869-1947.³²

Despite the predominance of studies on demographic statistics (in particular population censuses) and, to a lesser extent, economic indicators, research in some countries (Colombia, Brazil and Mexico) has also focused on medical and health statistics. Laura Cházaro's doctoral thesis on nineteenth century Mexican medical statistics and the studies related to health statistics in Rio de Janeiro and São Paulo are examples of this.³³ Brazil also stands out for its studies on educational and criminal statistics.³⁴ The list could be extended to include other sectoral statistics, but it is clear that not all studies on social activities that use quantitative data concern the history and sociology of statistics in the narrower sense given in this review.

This genre of research also focuses on the history of techniques of statistical analysis and fundamental knowledge such as calculation and probability theory. However, these aspects have received relatively less attention in the Latin American context for various convergent reasons. A first and certainly fundamental reason relates to the fact that major developments in statistical theory occurred in Europe and were then – to use a very simplistic but illustrative metaphor – imported by peripheral countries or even by non-peripheral countries. A well-known example is the case of sampling theory which, after the Russian Revolution, migrated from that country to the United States as M. Mespoulet shows.³⁵ The processes of importing knowledge were complex, selective, and asynchronous. They differed greatly from one national experience to another, which clearly illustrates the relative margin of autonomy of statistical systems to appropriate knowledge of universal significance. However, the diffusion of concepts, theories or even less sophisticated forms

28. C. LANATA BRIONES, 2016. For an analysis of a more contemporary index, see C. DANIEL & C. LANATA BRIONES, 2016.

29. C. LANATA BRIONES & H. GONZÁLEZ BOLLO, 2017.

30. C. DANIEL & G. VOMMARO, 2016.

31. C. WAINERMAN & Z. RECCHINI DE LATTES, 1981.

32. H. OTERO, 2013.

33. L. CHÁZARO, 2000, who has also made important contributions on the different approaches to measuring the social sphere applied by the different professions (statisticians, doctors, engineers, actuaries, etc.). Another example can be found in L. CHÁZARO, 2009.

34. N. GIL, 2007; S. MACHADO, 2008.

35. M. MESPOULET, 2001.

of know-how towards Latin American countries is an undeniable reality.³⁶ Second, the great Latin American statisticians of the nineteenth century were more interested in urgent practical issues, like developing statistical systems and producing reports, and their education was not particularly theoretical, despite a few exceptions.

This generalisation, which is another important difference with respect to European studies, also has its exceptions. Leticia Mayer Celis' fascinating book raises the provocative hypothesis that the origin of probability was linked to discussions about moral probabilism that, in turn, was a consequence of the contacts between the West with the New World and the East, in which the Jesuits played a leading role. Probability may therefore not have arisen in the seventeenth century, nor may its origin be purely mathematical or European, as Ian Hacking argues. Mayer Celis posits that its genesis is earlier, with the New World playing an essential role.³⁷ Héctor Vera's study, which focuses on the difficulty of imposing the metric system in Mexico and the resulting development of a kind of metrological bilingualism, is also worth highlighting.³⁸

Unfortunately, there is still a lack of research on how other simpler statistical tools, such as the use of percentages and averages, have evolved in Latin America, and/or on the impact of more elaborate techniques such as sampling or even census mechanisation. This rather negative image can be generalised to the use of a graphic language in statistics across the region, since the few existing studies have a tendency towards illustration rather than in-depth analysis of graphic semiology.

A final point about statistics concerns the circulation and treatment of figures. This relates to the problem of confidence in numbers. Trust in numbers is another problematic aspect of the Latin American history of statistics since statistical culture in the region is weak. This long-term trend has been reinforced recently by the questioning of statistical output under what Beaud and Prévost define as a neoliberal statistical regime. Obviously, the problem of confidence extends beyond the regional context.

The study of the acceptance and reception of numbers has been based above all on analysis of the discursive strategies of the press, in its double role as a political actor and as a heuristic primary source for historians. Among other studies, Claudia Daniel's book on "public numbers" is the most successful example. The author combines analysis of the logic of building complex statistical indicators (such as country risk, electoral surveys and the consumer price index) with the questions of diffusion, negotiation and the

36. A discussion on this topic can be found in L. CHÁZARO & F. GORBACH, 2015.

37. L. MAYER CELIS, 2015.

38. H. VERA, 2017.

battle for their use in the journalistic, political and scientific fields, a task undoubtedly more visible in the sociological field than in the historical one.³⁹

3. Review and challenges

At this point, a preliminary assessment of the lights and shadows that characterise the study of the socio-history of Latin American statistics is needed. This review is very positive because, despite being marginal and very specific, the discipline has advanced substantially in a very short time. In fact, the socio-history of statistics is a recent field of study in Latin America as research on the subject only began in the 1990s. Since then, and in just over two decades, a significant number of studies have been carried out, many of them doctoral theses, which suggests that the field is dominated by young researchers. It is also a disciplinary field explored almost exclusively by Latin Americans, unlike other historical disciplines (political history in particular), frequently investigated also by foreign authors.

Thanks to this output there is now a quite thorough – and of course improvable – knowledge of the statistical systems (or some of their aspects) of Brazil, Argentina, Mexico, Chile, Colombia and, to a lesser extent, of other countries such as Peru,⁴⁰ ordered according to the number of studies on each country. Contrasting with the monist visions of the state, these studies show a fragmentary and contradictory state rationality marked by advances and setbacks. Viewed together, they generate medium and long-term periodisations for each national entity that fit in well, although with their own specificities, with international statistical regimes. However, at the same time, they also portray the limits of periodisations based exclusively on the political history of each country, although these have their importance.

As in other latitudes, the studies carried out so far are characterised by a certain tension between two distinct styles of reasoning. On the one hand, they can be conceptual histories, which provide a historical account that is more sociological, structural and continuist. On the other, they can be political-institutional histories characterised by a more historical, procedural and rupturist vision. The two genres of studies commented upon in this article have multiple theoretical influences, although it can be argued that in Latin America the French influence has been greater than that of the Anglo-Saxons, at least until recent times. Specifically, this refers to the theoretical, though not necessarily operational, influence of Pierre Bourdieu's work, particularly

39. C. DANIEL, 2013. According to the author, public numbers have several characteristics. They are produced by experts; they are broadly circulated in the media and are received with trust and consensus by their audiences. Public numbers are also characterised by their performativity in the sense of influencing the reality they measure.

40. On Peru see G. CHIARAMONTI, 2000; J. RAGA, 2008.

his notion of scientific field, much cited but problematic when referring to public statistics where, by definition, there is a monopoly of production. In that regard, the influence of Michel Foucault's concepts of discourse, archaeology of knowledge and governmentality stand out. The latter notion is very clear in Alexandre Camargo's recent PhD thesis on Brazil, also influenced by Anthony Giddens and Norbert Elías. Finally, and of course with greater impact, Alain Desrosières' model studies have exerted a substantial influence.⁴¹ There are exceptions, however, as shown by the interest in and use of North American and Canadian authors such as Theodore Porter or Ian Hacking.⁴²

Although these influences could be linked to styles of reasoning and research (for example, the classic opposition between political scientists who see statistics as part of a history of the state and historians of scientific knowledge) or even to the academic training of Latin American researchers, more detailed analysis of the cases suggests that a degree of caution is needed. Latin American history of statistics is a vigorous and dynamic field, albeit a marginal one within history. This characteristic is not specific to Latin America, however. Seen in terms of academic disciplines, nonetheless, it is a field where historians predominate, though there are substantial contributions from sociologists like Cházaro and Daniel, economists such as Nelson Senra, and anthropologists such as Leticia Mayer Celis or Jorge Pantaleón. Such predominance increases in postgraduate training. A more comprehensive view of this problem should consider the decisive influence of the places where doctorates are completed (for example, in the Francophone or Anglo-Saxon world) as well as the translation into Spanish of key works. The books of Ian Hacking and Alain Desrosières have been translated, but not those of Theodore Porter, for example. Moreover, the type of statistics reconstructed (demographic, health, economic, etc.) – each corresponding to a specific academic field – and, above all, the tendency to eclecticism (typical of a field in formation and avid for references, which owes its emergence to the combination of institutional and conceptual approaches) should also be considered.

With the exception of Brazil, where the historical tradition of the Brazilian Institute of Geography and Statistics (IBGE) stands out, in the other countries the socio-history of statistics and quantification is an academic field in the strict sense of the term. Research is basically carried out at university level. The legitimacy and continuity of the IBGE, the union between statistics and geography and, above all, its remarkable archives are decisive factors that explain this difference. The role of key individuals – as in the case of Nelson Senra – must also be highlighted since, without them, nothing could have been achieved despite the positive context.

41. P. BOURDIEU, 1966; M. FOUCAULT, 1986; id., 2004.

42. T.M. PORTER, 1986; id., 1995; I. HACKING, 1990.

Although there are still several gaps, this is a young, highly dynamic historiography, particularly when considering the differences with respect to Western industrialised countries. The gaps are linked to the fact that many nations do not yet have studies of this type and much remains to be done in terms of conceptual history and statistical knowledge. Regarding the differences between the Latin American historiography and that of industrialised countries, the existence of new and weaker states – inevitably reflected in the available archives –, the aforementioned problem of the importation of knowledge and the lesser development of the history of science in general, and of many disciplines in particular, must be highlighted. This last point is crucial since researchers of the history of statistics must simultaneously reconstruct that of other contiguous fields, less well-explored or not even researched at all, such as the history of demography, economics or medicine. This does not mean that there is no specific research within these fields. The studies on birth control debates and policies or on the specificities of so-called Latin eugenics are evidence of this in the case of demography. However, these studies have not addressed the impacts of policies on statistical production or, as in the case of birth control, they refer to recent time periods which are less fully covered by the Latin American history of statistics.⁴³

This review of the existing literature would not be complete without mentioning that, on occasions, the studies suggest a certain positivist drift in the sense that they focus on extremely factual developments. This characteristic is another consequence of the lack of primary sources and of knowledge of the disciplinary contexts that obliges researchers to rely on the available data. It can also be said that we know more about the statistical regimes of “nationalisation” and “macro-management” than about the previous periods.⁴⁴ In an analogous sense, there is greater knowledge of statistical systems and their final outputs than of the practices that are internal to construction processes, although this is common to the entire Western world.

Finally, the available reconstructions mainly focus on the national level and much less on the state/provincial or municipal levels. Interesting exceptions exist, but they are generally limited to large cities such as São Paulo, Medellín or Buenos Aires. The statistics bureau of the City of Buenos Aires, for example, was very powerful and creative until the military coup of 1943

43. On eugenics, a field that has expanded remarkably since the now classic book by N. STEPAN, 1991, see A. GARCÍA GONZÁLEZ & R. ÁLVAREZ PELÁEZ, 1998 and M. MIRANDA & G. VALLEJOS, 2012. Concerning birth control see K. FELITTI, 2012 and the recent and well-documented book by J. CASTRO ARCOS, 2017.

44. There are nonetheless several relevant studies on the colonial period, during which forms of organisation and measurement were established that, in many cases, continued to exist after independence, as shown by the work of M. AGUILERA, 2017 and A. CAMARGO, 2017.

and the arrival of Peronism, and again between the democratic recovery of 1983 and the reform that established the city's autonomy in 1996.⁴⁵

The smaller number of studies at the local level derives largely from another difference with respect to Europe: the lesser weight of historical trajectories and regional political powers, which influence is clear, for example, in the German, Italian, British or Spanish. Moreover, despite the explicit adherence to federalism (in imitation of the United States) most of the Latin American countries were characterised by a certain “de facto centralism” concerning institutional, political and budgetary practices, which were favoured –in the case of statistics– by the tendency towards technical monopoly that characterises the activity itself.

Finally, it is worth concluding by outlining some challenges for the future agenda of the discipline. The first concerns the question of the potential impact of studies of history and sociology of statistics outside our own field of research. As an example, and in line with the pressures that current scientific systems exert on basic science studies: can critical analyses of the history of categories contribute to new and better measurements? Or is that claim completely outside the discipline's objectives? Of course, the work of deconstructing categories is often disruptive for the producers of (current or historical) statistics. There is a bridge to be built if we wish to understand specific realities and not simply the way in which statistics reflect them.⁴⁶

The second challenge concerns the scale of analysis or, in other words, the need to abandon the nation-state, whether descending to state/municipal levels, or advancing towards the supranational scale, in response to the successive processes of “statistical globalisation”. The quest for standardisation began with the international statistical congresses of the nineteenth century, and the organisations created by the League of Nations and, above all, the United Nations. This challenge, which brings us closer to a connected, global or transnational history, generates a natural need for a more systematic use of comparative studies, of which three highly useful models can be cited.

The first is the very concept of statistical regime that constitutes an excellent example of what Charles Tilly defined as a universalising comparison, that is, one that seeks to determine how all cases of a phenomenon follow, with variations, the same rules or the same stages.⁴⁷ The second example –the encompassing comparison, to continue with the classification generated by Tilly– is evidenced in the research of Victoria Estrada Orrego.⁴⁸ Drawing on the archives of the Rockefeller Foundation, she illustrates the processes of

45. N. ZULOAGA & J.M. DONATI, 2015.

46. A reference in this regard is the work of C. WAINERMAN & Z. RECCHINI, 1981, which led to improved measurement of female labour force participation in subsequent censuses.

47. C. TILLY, 1984.

48. V. ESTRADA ORREGO, 2015.

dissemination and circulation of knowledge, techniques and people between the United States and Colombia. This is key to understanding the transformations of Latin American statistical systems during the twentieth century and the shift from French and German influence to that of the United States, which, with specific variations in each case, occurred in all countries of the region. Leticia Mayer Celis' research on the influence of globalisation after the discovery of the New World on the emergence of moral probabilism mentioned earlier is another suggestive example in this direction. The third model, the individual comparison, can be found in the above-mentioned work of Claudia Daniel on the answers given by Argentina and Brazil during the twentieth century to the decisive problem of statistical centralisation.

While it is clear that researchers in this discipline are aware of the effects of statistical internationalisation as an element of standardisation, the national framework has often led them to consider it as a sort of black box, whose mechanisms, temporalities and differences require greater attention, a trend that – as is argued here – is already developing significantly. The best way to perform this task, of course, is to work with the archives of other countries, something that is always difficult in terms of time and cost. Cooperation projects between groups and people seeking answers to questions that are bounded and defined collectively could be a real possibility. The use of figures in the formulation of laws; the end of the influence of this or that European school; the arrival of a certain technique; the criteria for measuring a category or classification; the links and influences between American countries – in the broadest sense of the term – of which we know very little, largely because Europe has always been the primary point of comparison, among other examples, would generate significant advances for researchers in the field, with reasonable investments for each one of them while favouring the interaction and exchange of information and experience.

A final and essential challenge is to increase the dissemination of research that examines Latin America beyond its borders, notwithstanding the fact that many researchers already have solid links with European and North American academia. As shown by the differences mentioned throughout this article, plus others that could be added, Latin America is an ideal point of comparison, not only with the Old World but also with other decolonised regions.

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