Maps as power instruments in the context of the Pacification of La Araucanía-Chile, second half of the nineteenth century

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Summary

The study is based on the importance of cartographic products in the social collective considering a historical view. There is a link between history of cartography and critical cartography and the role of maps as power relation and cultural artifacts, in the context of processes of conquest and domination of territories, by national states. A detailed analysis of specific elements comprising cartographic products both in scientific key as well as in its persuasive and rhetorical content is presented. These maps, with different scales and formats, are representations of the present Araucanía Region, which had a crucial role during the so-called “Pacification process”, led by the Chilean State during the second half of the nineteenth century. Then, with the selection and compilation of this material, an analysis based on a theoretical model generated after the John B. Harley’s bibliographic review about so-called "epistemological and unintentional silences of maps", is considered. In this sense, criteria such as the "scientific discourse" - compilation, classification, symbolization, hierarchy and standardization of the cartographic products- and the "social and political discourse" -toponymic silence and displaced names- of cartographic images are analyzed. On the other hand, this particular region located in the south of Chile, has been widely studied by nineteenth-century naturalist scientists, verifying a wide cartographic-geographical material which accompanies these studies.

Keywords

Cartographic power, rhetorical map, toponymic silence, indigenous communities, landscape standardization, nineteenth-century scientists, Pacification of La Araucanía, indigenous place-name, critical cartography

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Power of maps in the historical context

During the history of cartography, traditionally maps have served to locate and situate the scenarios where historical events unfold. However, a different position of cartography and maps is proposed towards the end of the 1980s by John B. Harley. A new look to interpret maps after a thorough analysis of the role and importance they have had in the history of humanity is proposed. In this way, the author causes a break with the traditional scientific trend of cartography which considers maps, from an epistemological point of view, a reflection or mirror of reality. Harley relies on theoretical approaches from both Jacques Derrida on the rules of discourse and the deconstructionist method, and Michel Foucault on the relationships between power and knowledge. Later, he applies the aforementioned postures to the field of cartography. In this way, Harley suggests that maps, far from being objective, accurate and neutral in terms of values; on the contrary, can be considered "cultural texts" and "rhetorical images" loaded with value and meaning. This implies a paradigmatic change in the way of conceiving cartography and maps since that, far from being a mirror of reality, maps are objects or images of a subjective, persuasive nature and therefore they are never neutral. According to Harley, consciously or unconsciously, cartographer or mapmaker is influenced by the historical, political, technological, social and cultural context; which is captured in the product or cartographic image.

Given this new perspective, Harley visualized the power of cartography as a social practice, beyond the technological component that may have. The author proposed a distinction between external power and internal power in cartography, to demonstrate the way in which maps in society work as a form of power-knowledge. External power is the most familiar in the discipline and is exercised "in cartography" and is also executed "with cartography". Often both powers, by tradition, have been structurally centralized and exercised in a bureaucratic manner or imposed from above by monarchies, national states, political centers, ministries or military entities, among others. That is, all those actors that create, administrate and manage maps and territorial information.

Along with this external power of cartography, Harley identifies another power which corresponds to the political and social effects caused by cartographers when they create, design and make maps. It is the so-called internal power in cartography, which comes from map itself and implies the way in which they are made. The key to this internal power is the cartographic process itself, that is, the processes of compilation, generalization, classification, symbolization, hierarchization and cartographic standardization. In other words, this power involves all those processes of handling data and information represented symbolically and spatially on a map.

When conceiving maps from an epistemological perspective, Harley points out that readers are blended or imbued in the so-called cartographic text, the lines on the map acquire full authority. In this way, maps are authoritarian images that can reinforce or legitimize the status quo within a specific political-social-cultural order, regardless of whether the public user is aware or not.

In this way, the article aims to highlight all those elements of a map, considered as a cultural text and rhetorical image, and that acted as effective tools for the territorial
consolidation of the Chilean national state during the nineteenth century, with an eminent persuasive message in scientific key. At the same time, approaches from the critical cartography regarding the power and rhetoric that maps have had in a determined historical context, through the analysis of cartographic products specific to the study area, for South American latitudes and that have been delimited for this research are exposed.

The scientific and political and social discourse of the maps

Based on the theoretical approaches of John B. Harley in the context of the so-called epistemological or unintentional silences of maps, the following analysis criteria were considered i) the scientific discourse of maps and, ii) the political and social discourse of maps.

An analysis and interpretation of some chosen maps, according to the following components or elements, explicit and implicit in the cartographic documents was made: title, compilation, classification, hierarchy and standardization. Firstly, the title refers to the name of the map and specifies its content. The compilation includes the selection of the thematic information represented in the cartographic product, basically physical-natural content and elements of an anthropic or artificial nature. The classification implies the type of implementation that the cartographic product has for its correct symbolization, corresponding to the so-called "map alphabet": points, lines and areas. Hierarchy mentions to the modulation or "variation" of symbolization and/or labeling, changing the size and type of letter used. Standardization refers to the consensus acquired to represent the natural or artificial elements according to a convention established in the prevailing disciplinary, technological and social context, for example, one of the most important elements being the network of geographic coordinates, which give precision and mathematical accuracy to the map in a uniform and continuous Euclidean space.

Secondly, the toponymic silence is about the deliberate elimination of all original place-names from the territories represented in a cartography, or the replacement of an original place-name with another brought from a different socio-cultural context. The landscape stereotype is related to the incorporation of representation techniques that implicitly encompass cutting-edge technological processes during the survey and drawing up of the map and that homogenize the landscape in scientific terms.

Map of 1777

In general terms, the basic information presented by the cartographic product entitled "Map of a part of Chile that includes the land where the events occurred between Spaniards and Araucanians", made by Tomas López de Vargas in 1777, corresponds to the hydric network, landforms and settlements. The implementation of the map is the linear and punctual type (see Fig. 1).
Fig. 1: Map of 1777, Source: National Library of Santiago-Chile.

The standardization of the map is given by the network of geographic coordinates of latitude and longitude every 1° and a separated internal division every 15' in an internal frame. It presents a graphic scale and the legend is associated with a symbol of pictorial character. Both the title and symbol are incorporated into the interior of the body of the map occupying the maritime space called "South Sea". All map elements are framed in an outer margin, except the graphic scale.

This map of 1777 shows the indigenous population as "Indian villages" represented by a smaller legible circle; however, without indicating the name of each village given the scale of the product (see Fig. 2). These settlements present a homogeneous spatial distribution, especially in the coastal line, between Mataquito and Bío Bío rivers; and between the latter and the Imperial River; and the immediate interior territories, such as the western axis of the Nahuelbuta Mountain. Another pattern of location of the settlements is along the main and secondary rivers. In the courses of the Imperial, Toltén and Cruces rivers, in the southern part of the area, is clearly observed. The territory corresponding to the Upper Bío Bío is the one with the highest density of settlements (between 37°-38° south), associated with hydrography. In general, although each village is not identified for reasons of scale, if there are toponyms indicating the name of the places where these indigenous people
localized. It is striking that on the eastern side, both Villarrica Lake and the so-called Lanahue Lagoon, there is a population void representing only volcanoes and mountain chains (between 38°-40° south). Of all the maps representing the territory at this scale, the mentioned map indicates the largest location and details of the original settlements. In this sense, this map is the one with the highest degree of toponymic silence. The exception is that the symbol used by the author lends itself to confusion with the one used to indicate "Private large estate".

Fig. 2: Map of 1777, Source: National Library of Santiago-Chile (detail).

Considering the landscape stereotype, the map highlights the representation of relief in a pictorial way. The icon of the figure of an individual hill which, in its overall vision, originates the sensation of relief is used. It also highlights the larger size of this icon used for the sector of the Andean and Nahuelbuta mountains. The volcanoes with a pictorial figure of a larger size are represented. On the other hand, the hydrographic network portrayed by the major watercourses, tributaries and upper watershed areas clearly express the settlement pattern in the west-east direction complemented by the network of roads between the Itata and Bío Bío rivers and the lower course and middle of the Cruces River.

The map indicates a hierarchical toponymy, with large letters to identify names of places - new and native- and smaller letters to name rivers and lagoons (lakes). It is emphasized that the font size is the same for both the main river and its tributaries. It can be established that the map of 1777 presents a rather elaborate toponymy, the most important factor being the associated symbol. This element called on the map as "Explanation of the signs" identifies
a set of pictorial signs, mostly of punctual implantation, to refer to the information of human nature contained in it, making it quite easy to read it by not presenting a toponymy surcharge within the cartographic composition. In general, there is a similar toponyms density compared between the coastline and the interior of the territory, which gives harmony and balance to the whole image.

Sketch of Lands by the Properties Commission of 1890

The outline named "Sketch of the land occupied by the Indians settled by the commission of titles", drawn in 1890 by José Miguel Varela. It corresponds to the sector of Cholchol located northwest of Temuco city and has the peculiarity of locating fifty Mapuche reductions that they do not appear in other cartographic products of the time, despite the rudimentary nature of the mentioned sketch. The compiled information corresponds to the local hydrographic network and indigenous reductions, both with their corresponding toponymy. In terms of implementation, the sketch preferably occupies the punctual and linear (see Fig. 3).
The sketch lacks standardization since it does not present a network of geographic coordinates, it does not contain a formal title, or graphic or numerical scale. However, the scale of the document has been calculated being 1:20,000 (calculation made by the document’s authors). From a note located on its lower right side, the title, date of preparation, the author and his signature are rescued. The sketch lacks an outer frame that integrates the few elements that make it up. However, the toponymy analysis shows that there was an adequate hierarchy treatment of the labels. In this sense, the sketch presents a diverse toponymy: print and capital letters to indicate the sectors; tiny printing letter for hydrography; and a small handwritten letter for the name and surname of those filed in each reduction.

In general, the area represented in the sketch is divided into two water subsystems: the Cholchol River located to the west and the Renaco stream to the northeast of the area.

The second water subsystem corresponding to the Renaco stream in more detail will be analyzed, with northeast-southwest orientation, which deposits its waters in the Cholchol River in the homonymous locality (see Fig. 4). In the upper tributaries of this stream, a concentration of reductions is found. Taking as reference the beginning of the Renaco stream, the Llolletué stream converges from the northwest, where three reductions are found (M. Güincagual, G. Lepin and A. Alcapan); another channel that flows into the Llolletué -from the south- houses two other reductions in its head (A. Guentel and J. Cayuqueo). While at the beginning of the Renaco stream also throw in the Collimullin stream -from the southeast- where there are two reductions (C. Nagüelñir and J. Paillao) and other scattered smaller. Two concentrated and larger reductions are located in north of the Güincarrucague stream (F. Carilaf and G. Lepin), which also tributaries to the Renaco stream. To the north, it encloses all this territory the sector called "Hills of Ñielol". It is also observed in the sketch, north of the middle course of the Renaco stream, a hydric system independent of the previous ones, in which five minor reductions are located (the largest being C. Lleubul).
Regarding the toponymic silence, of the three cartographic products analyzed, this sketch is the only one that represents the establishment of *mapuche*, although they are land occupied by a population settled by the Private Properties Commission of the time. Along with the location, the name (abbreviated) and surname of the indigenous "beneficiary" is indicated by the settlement process. However, when indicating with the same punctual symbol the lands with indigenous people, as well as the use of the same style and size of the corresponding label, the image denotes a homogeneous and simple treatment for the representation of the native population, which ancestrally occupied the territories in dispute.

Concerning the landscape stereotype, although the document analyzed corresponds to a sketch, the author used of color to standardize the outline according to cartographic standards of the time. In this way, the celestial color is used for the layout of the hydrography (main river and streams). The red color was used to homogenize the punctual implantation of the settlements by means of the geometric figure of small diamonds of equal size. For the place names, regardless of their hierarchy, the color black is used. Likewise, the areal type toponomy is used, for example "National Settlers" or "Sub-auctioned Lands" to indicate the possession of large tracts of land, but without specifying their internal details. The above, denotes that the indigenous communities are circumscribed to the bottoms of rivers and streams, while all the extensive zones of interfluvies are available to the new national colonists. This is evident in the large blank spaces in the sketch -only interrupted by the labeling- as are the upper part of the sheet; the area of interfluvies; and the lower right side of the composition (in Fig. 3). This last space is occupied by the text of the sketch, which does not allow appreciate in the cartographic
image, the true territorial magnitudes granted by the State for the colonization of external population in this area near the current city of Temuco.

**General Chart of Colonization of 1916**

The following cartographic product is titled "General Chart of Colonization of the Province of Cautín" and was built and drawn by the cartographer Nicanor Boloña in 1916. The author belonging to the Office of Geography and Mines of the General Direction of Public Works, created the product for the provinces of Malleco and Cautín and its main objective was the surveying of small, medium and large properties. This took place in the context of the process of colonization in which the military cartographic representations were giving way to those of the division and property of the land.

The complete map covers the province of Cautín and it consists of a total of 15 individual sheets, of which sheet N°3 in this analysis is considered. In this way, the General Plan presents a title, numerical scale 1:500,000 and the scale graphic; all framed by the logo and sign "General Inspection of Colonization and Immigration".

The chart presents a symbol indicated as "Explanation", detailing the number of lots or sites and the area in hectares. Two groups of linear implementation are used: one to represent the "routes", "railway in operation" and "railway in project"; and a second group for five types of limits: concessions, sub-delegations, departments, provinces and international boundary. About the standardization of the product, it presents both pairs of geographic coordinates separated every 10', all of which are framed within a rather elaborate internal margin, divided every 1'.

At following, the Sheet N°3 -numerical scale 1:100,000- corresponding to the north-central part of the province of Cautín, delimited to the north by the rivers Cautín and Quillem, to the south by sectors Vilcun and Cherquenco, to the west by the sector of Lautaro and sector Curacautín by the east, is analyzed (see Fig. 5). Like the General Plan, the basic information compiled corresponds to the hydrographic network with its corresponding toponymy; major settlements; routes, limits and properties; and from the point of view of map implantation, the areal and linear predominates. For the treatment of toponymy, large labels with a capital letter for settlements and sectors are used; with small letter the major water courses, such as the rivers Cautín and Quillem, are indicated. The highlight of the map is the delimitation of the properties, in which it is indicated (if the size allows it) the assigned property number, the name of the owner and the number corresponding to the surface in hectares (see in more detail in Fig. 6).
Regarding the patterns of distribution and size of the properties, the map shows some quite different sectors, standing out in the whole eastern area of the chart, between the river Cautín and sectors San Patricio and Cherquenco, a regular grid pattern corresponding to the properties of larger size with an average of 500 hectares. It is important to highlight that the geometric layout of the properties, in its majority, is independent of the hydrographic networks and the access routes, preferably occupying the flat sectors of lower slopes or inclinations.

In addition to the toponymy indicated above, the original one is not identified on the map, except for large sectors such as Pillanlelbun, Vilcun, Cherquenco, Quillem, and other names introduced or replaced such as San Patricio, Cajón (south side of the map). Likewise, analyzing the map as an image of the territory, the existence of a toponymic silence when the settlements and indigenous sectors are invisible in the state cartography documents, can be observed.

Concerning the landscape stereotype, as well the other maps analyzed, in addition to the depict of the relief with the shading technique and the regular and geometric scheme of the territorial division through the concessioned lands, another standardized element for
representation of independent urban sites of size is incorporated. This method consists of a regular squared template, as shown on the map for the settlements of Lautaro, Vilcún and Quillem.

Finally, another element of standardization of the cartographic product is the use of color on the map: light blue used in the layout of the entire hydrographic network and its associated toponymy, modulating the thickness of the river line according to its degree of importance. The red color is highlighted for the indication of the surface of each of the properties recorded (see Fig. 6). This field survey was advised by the General Inspection of Colonization and Immigration, the key State agency in the process of colonization carried out in the provinces of Malleco and Cautín.

![Map of the area](image)

Fig. 6: Chart of 1916 (sheet N°3), Source: National Historical Archive of Santiago-Chile (detail).

A synthesis of the analyzed cartographic products

As specific conclusions, the three cartographic products analyzed were made on different dates, previously, during and after the Pacification period, with which they present both distinctive characteristics as well as certain common aspects.

In the so-called "scientific discourse of the map", it materializes in several aspects. Regarding compilation of information, the three products represent the hydrography of the place, whereas for the settlements they have different treatment: location of "Indian
villages" in the Map of 1777; location of indigenous reductions in the Sketch of 1890 and; only major settlements in the Sheet of 1916. Concerning to the type of basic implantation to symbolize information, the punctual and linear in the first two maps is highlighted; and especially the areal implantation in the third map to represent the properties.

When analyzing the hierarchy of toponymy, both the Map of 1777 and the Sheet of 1916 present a general toponymy for both settlements and hydrography, with a size treatment for their hierarchy. Nevertheless, the Sketch of 1890 shows a partially hierarchical toponymy with a homogeneous elaboration in the labels for both the settlements and the hydric network. Regarding the Euclidean standardization and homogenization of the products, the Map of 1777 and the Sheet of 1916 stand out, which present a network of geographical coordinates of latitude and longitude framed in elaborated margins, as well as the representation of numerical and graphic scales. Both products also have symbol and legend for easy reading. Not so the document of 1890 that lacks these last elements: being a sketch its graph is less elaborated.

On the other hand, regarding the "political and social discourse of the map", after the interpretation and analysis of the three products, the following can be established. As for the so-called toponymic silence, the Sheet of 1916 does not present original toponymy, highlighting only the large settlements of the covered area. However, the sketch is the only document that indicates the location of the Indians after the filing made by the Commission of Titles of the time. The Map of 1777, although it represents the location of the peoples of Indians, it does not indicate its original names, therefore it is considered that it presents a partial original toponymy.

Regarding the "landscape stereotype" this criterion stands out in several aspects to consider. For instance, the pictorial representation of the relief used in the Map of 1777 and the technique of shade relief in the Sheet of 1916. It also highlights in the latter the standardized technique for representing urban plants -homogeneous grid pattern- as well as the geometric representation of the properties. Another stereotype is the use of color both in the Sketch of 1890 and the Sheet of 1916, to highlight the hydrography (blue color in both) and red color for settlements (in the sketch) and surface properties (in the sheet). It stands out the use of labels that cover blank spaces on the map corresponding to extensive territories without information or detail, like the labels used in the Sketch of 1890.

Concerning the general conclusions, the analysis of the cartographic products selected in this article contributes to the interpretation of the so-called Pacification of La Araucanía, which comprised two phases: first, the generation of a cartography of discovery and recognition, of a military issue; second, a mapping of survey and delimitation of properties, with an administrative-legal character, for the distribution of lands of the conquered territories.

Through the selected maps, the so-called "toponymic silence" is observed, especially in those cartographic products generated during and after the territorial incorporation process of the study area. In the same way, the "landscape stereotype" is verified, since the described maps incorporate graphic elements that standardize and homogenize the represented space, by means of the most advanced and available cartographic techniques of that time.
It is verified that the approaches and theoretical models of John B. Harley, with respect to the so-called external and internal powers that exercise maps and cartography as a whole, can be applied to our Chilean historical reality. These maps perfectly allow be analyzed and interpreted as cultural texts and rhetorical images, in conjunction with their scientific and technological interpretation.

Finally, in the context of critical cartography -in its aspect of historical criticism- it can be asserted that map considered a power and knowledge artifact, it was also part of the tools of domination and legality that the Chilean State used to incorporate into its territory, the zone of the current Araucanía region during the so-called euphemistically "Pacification process", as demonstrated by the aforementioned maps.

**Discussion of Literature**

Valentina Aliste\(^{15}\) mentions that cartographies of exploratory journeys made by foreign naturalists such as Claudio Gay (Atlas of Physical and Political History, 1854) and Amado Pissis (Topographic and Geological Map of the Republic of Chile, 1873) have been analyzed.\(^{16}\) Similarly, other authors as Ignacio Domeyko, Rodolfo Philippi and Gustave Verniory published writings and maps for scientific and technical purposes in their exploration journeys to the Mapuche territory and were largely promoted by the State for the knowledge and integration of the indigenous territory to the recent nation.\(^{17}\)

In the context of the exploration and cartographic construction of the territory, Claudio Gay considers the “Map of Chile surveyed by order of the government of this Republic” (1841) which served as the basis for the "Map for the Intelligence of the Physical and Political History of Chile" (1854).\(^{18}\) The latter was published in his "Atlas of the Physical and Political History of Chile" (1854).\(^{19}\) Regarding the territorial recognition of La Araucanía, Ignacio Domeyko made in 1854 the map called "Sketch of a Map of Araucanía".\(^{20}\)

In 1846 Bernardo E. Philippi generates the "Map of the Province of Valdivia", which represents the southern part of La Araucanía comprising territories of the current lakes Calafquen and Villarrica, the Villarrica volcano, as well as the Toltén and Queule rivers, among others.\(^{21}\)

In the context of the military expeditions by the Chilean state, another important map analyzed by the authors is that presented by Colonel Cornelio Saavedra to the Ministry of War, at that time, which was elaborated by Manuel José Olascoaga and titled "Plan of Arauco and Valdivia with the designation of the Old and New Frontier Line against the Indians".\(^{22}\)

About of the State and property, Flores and Azócar (2017) also highlight that during the process of colonization representations of a military character gave way to the properties representations.\(^{23}\) "General Chart of the Province of Cautín" (1916) and the "General Chart of the Province of Malleco" (1917), both products sponsored by the Office of Geography and Mines belonging to the General Direction of Public Works, are prepared by the cartographer Nicanor Bolôña.\(^{24}\) In this same sense, but more specifically related to the Andean territory of La Araucanía, Jaime Flores\(^{25}\) analyzes the occupation of Villarrica and
the line of the Andean mountain range led by the expedition of Colonel Gregorio Urrutia in 1883. On the other hand, Rosenblitt and Sanhueza in their work Historical Cartography of Chile highlight several large scale cartographic products that detail, among others, the delimitation of properties. These documents (with the number of property and area in hectares) are the "Plan of the Colony of Traiguén" (1881), "Plan of the village of Perquenco" (1888), "Plan of the colony of Purén" (1898), "Plan Quepe-Calbuco" (1898) and "Sketch of the land divided into sections, located between the Malleco river and Dillo stream" (1893). In some cases only the property number is indicated, as in the sketch "Hijuela between the Renaico and Malleco rivers. Angol" (1874) and "Plano N°2 of Carahue: from the south side of the Imperial River from near Pancul to the sea: Auction of 1893 ". The authors also mention other cartographic products, on an intermediate scale, such as the "Sketch of central valley of La Araucanía with the routes followed by the divisions that have crossed it" (1869), "Sketch of Malleco’s line and new forts of Cautín" (1869) and "Plan of the territory between Renaico and Malleco with demonstration of the line of high border" (1870).

Similarly, the authors Martín Correa and Eduardo Mella (2009), in the context of the military occupation of La Araucanía that occurred between 1881-1882, also they refer to the map called "Plan of Arauco and Valdivia with the designation of Ancient and New Frontier against the Indians" (1870). The authors also rescue in the text a large number of Mapuche settlements of smaller sizes classified as "abajinos" and "arribanos" territories, alluding to the spatial orientation of the communities: located towards the coast and the Andean mountain, respectively. However, in the aforementioned map these indigenous settlements are not represented, except for some military forts, consolidating the frontier line.

Zenobio Saldivia details the contribution of Francisco Vidal Gormaz as a Navy surveyor from the interior of the Chilean Navy, in his explorations to La Araucanía region, mainly in the 50's and 60's of the nineteenth century. This hydrographic and cartographic contribution prepared by Vidal Gormaz was crucial to the support of military officers in their strategic and offensive operations during the military expedition of Cornelio Saavedra in the context of the Pacification of La Araucanía.

Flores and Azócar also make reference to the Vidal Gormaz’s cartography, especially the nautical chart of the Toltén river of 1886-1887 (scale 1: 20,000), which compared with the map of 1855 ("Plan of the Coasts of Chile"), a greater information and level of detail is appreciated.

Finally, the J.B. Harley’s speech about the toponymic silence which is expressed in the cartographic images, Alejandra Vega emphasizes in her analysis that during the sixteenth century, this way of creating a determined image of the world with the help of maps as tools of power and knowledge has been recurrent in cartographic production, in which the period of the nascent republic in which the State in its formation played a key role.
Primary Sources

A revision of cartographic and bibliographic material related mainly to the time of the Pacification of the Araucanía; that is, from the mid-fifties until the beginning of the eighties of the nineteenth century, as has been recorded by various traditional and contemporary authors, is described below. Furthermore, visits and consultations to public entities such as National Historical Archive and Map Library of National Library, both located in Santiago of Chile, were made.

Among the traditional authors about Araucanía region see Lara, Horacio: *Crónica de la Araucanía* (1869), Imprenta El Progreso, Santiago de Chile; Guevara, Tomás: *Historia de la Civilización de la Araucanía* (1902), Tomo III, Imprenta Barcelona, Santiago de Chile; Vera, Robustiano: *La Pacificación de La Araucanía* (1905), Imprenta El Debate, Santiago de Chile; Navarro, Leandro: *Crónica Militar de la Conquista y Pacificación de La Araucanía* (1909), Tomo I, Imprenta Lourdes, Santiago de Chile; Encina, Francisco Antonio en: *Historia de Chile desde la Prehistoria hasta 1891* (1954), Editorial Nacimiento, Santiago de Chile. Among the contemporary authors see Lipschutz, Alejandro: *La comunidad indígena en América y en Chile* (1956), Editorial Universitaria, Santiago de Chile; Bengoa, José: *Historia del pueblo mapuche: Siglo XIX y XX* (2000), Ediciones LOM, Santiago de Chile; or Pinto Rodríguez, Jorge: *La formación del Estado y la Nación y el pueblo Mapuche* (2003), Dirección de Bibliotecas, Archivos y Museos (DIBAM), Santiago de Chile; among others.

Claudio Gay Mouret (1800-1873), French botanist and naturalist, arrived in Chile at the end of 1828, hired to teach Physics and Natural Sciences at the College of Santiago. Then, in 1830, he was hired by the Minister Diego Portales, to carry out and give an account, in scientific terms, of all the biodiversity existing in the country. In this way, Gay begins to study the physical nature of the country from Atacama to Chiloé. This exploration work, it takes twelve years: from 1830 to 1842. Then he continues with more than two decades of work in France, to supervise and publish his 26 volumes of the "Physical and Political History of Chile", about the flora, fauna and history of the country. In addition, "Atlas of the Physical and Political History of Chile" (1854), in two volumes. The first volume is dedicated to presenting the maps of the provinces of Republican Chile, the "Map for the intelligence of the Physical and Political History of Chile", as well as illustrations on sociological and traditional aspects. The second volume illustrates diverse specimens of the *chilensis* flora and fauna.

Pierre Joseph Amade Pissis (1812-1889), French geologist, geographer and cartographer, after doing some work on volcanology in his country, he is hired in Brazil and then in Bolivia. In 1848 he arrives in Chile and quickly assumes tasks linked to earth sciences. He has left several regional maps of Chile, topographic and geological, such as: Santiago (1857), or Valdivia (1859) and Aconcagua (1859). Also the "Mineralogical Plane of the Atacama Desert" (1877). In addition, the "Topographic and Geological Map of the Republic of Chile" (1873), aforementioned.

Ignacio Domeyko (1802-1889). He borned in Missik, Poland. In 1817 he enrolled at the University of Vilna to study Physical Sciences and Mathematics. From 1830 to 1837 he
studied in Paris: University of the Sorbonne, Institute of France, School of Mines in Paris, and the Conservatory of Arts and Crafts. In 1837 he obtained the title of Engineer in Mines. The following year he was hired in Paris to come and work in Chile as a professor of Chemistry, Physics and Mineralogy at the School of Mines in La Serena. Then he is dedicated to exploring various places in the northern part of the country identifying and describing inorganic exponents. In relation to the area of the Araucanía, the text "La Araucanía y sus habitantes" (1827) has bequeathed to us, where it suggests mechanisms to settle immigrants in that area and the characteristics that they should have.

Rodulfo Amando Philippi (1808-1904). He completed his primary studies in Iverdon, Switzerland. He studied his secondary education in the Gymnasium of Berlin, and higher studies at the University of Berlin, obtaining the title of Doctor of Medicine and Surgery in 1833. He arrived in Chile in 1851 and the following year he was hired as Rector of the Liceo de Valdivia. In 1853 he began writing in the Annals of the University of Chile on topics of taxonomy and geology and detailing their diverse scientific explorations throughout the national territory. In 1856 he made the scientific exploration to the Atacama Desert. In fact, he is the continuator of the description of the organic universe chilensis previously initiated by Claudio Gay. He has innumerable publications on references of the Chilean flora and fauna and some on paleontology and geology. In relation to cartography, he has left us a plan on the location of the Osorno Volcano (1852).

Gustave Verniory (1865-1949). Belgian engineer. He arrived in Chile in 1889 and is hired to participate in the construction of the railway line that would join the center of the country with Valdivia, passing through the territory of La Araucanía (from the Bío Bío River to the Toltén River). Verniory directed the construction of the route from Victoria to Toltén during the government of José M. Balmaceda. Later he does the same with the line from Temuco to Pitrufquén. He has bequeathed us some books in which the modus vivendi of the Araucanians and the clearing of forests of this region are manifest to materialize the aforementioned railway company. Between these texts we remember for example: Dix Années in Araucanie 1889-1899, (two volumes, without date).

Further Reading


Flores, Jaime. “La construcción de espacio. Una mirada histórica al territorio cordillerano de La Araucanía. El territorio andino de la Araucanía, concepto y antecedentes”. In Fronteras en movimiento e imaginarios geográficos: La Cordillera de Los Andes como


Vega, Alejandra. Los Andes y el territorio de Chile en el Siglo XVI: Descripción, reconocimiento e invención. Santiago de Chile: Dirección de Bibliotecas Archivos y Museos DIBAM, 2014.

Acknowledgements: This work is supported by the "Initiation Program in Research and Development and Creation, 2015, under grant code L2-15-11", Universidad Tecnológica Metropolitana. Project "Maps as instruments of power and rhetorical operation in the construction of cartographic images in the national collective. Case study: period of the Spanish empire and republican Chile of the nineteenth century".
Notes


3 In this regard, Azócar and Buchroithner argue that within the history of modern cartography there are three paradigms: scientific or empirical, critical and post-representational. This article would be inserted in the second mentioned paradigm. For more details see Pablo Azócar and Manfred Buchroithner, *Paradigms in Cartography: An Epistemological Review in the 20th and 21st Centuries*. (Berlin-Heidelberg: Springer Verlag, 2014).


6 Original title: “Mapa de una parte de Chile que comprende el terreno donde pasaron los famosos hechos entre españoles y araucanos”

7 “Mapa del Sur”.

8 “Pueblo de indios”.

9 Original title: “Croquis de los terrenos que ocupan los indígenas radicados por la comisión de títulos”.

10 “Sierras de Ñielol”.

11 “Colonos nacionales”.

12 “Terrenos subastados”.

13 Original title: “Carta General de Colonización de la Provincia de Cautín (Parte 3-15)”.
“Inspección General de Colonización e Inmigración”.


Aliste, “Develando el territorio para la nación”, 7: “the production of Gay and Pissis can be considered as part of the strategies of integration of the Mapuche lands into the Chilean territory by officially showing the indigenous territory as part of the Chilean State and nation”

Aliste, “Develando el territorio para la nación”, 8: “the auction and public sale of the land, is seen as one of the main strategies of empirical occupation of indigenous territory through the scientific knowledge of geographer engineers, who carried out the rationalization of the territory representing it as a geometric space, measurable and divisible”

“El Mapa de Chile levantado por orden del gobierno de esta República” (1841). “Mapa para la Inteligencia de la Historia Física y Política de Chile” (1854).

“Atlas de la Historia Física y Política de Chile” (1854).

“Bosquejo de un mapa de La Araucanía” (1854) by Ignacio Domeyko.

“Mapa de la Provincia de Valdivia” (1846) by Bernardo Philippi.

Original title: “Plano de Arauco i Valdivia con la designación de la Antigua i Nueva Línea de Frontera contra los Indios” (1870) by Manuel José Olascoaga.

Jaime Flores and Alonso Azócar, “Mapas para el Estado. La representación de La Araucanía: 1836-1916”. Scripta Nova Revista Electrónica de Geografía y Ciencias Sociales, Vol. XXI, no. 562 (2017): 1-25 :5 "the study on the Historical Cartography of Chile elaborated by Jaime Rosenblitt and María Sanhueza [2010], establish two moments in geographical and cartographic studies, the first half of the 19th century marked by the need to recognize and mapping the internal administrative political divisions of the territory and the second half of this century marked by the definition of national borders”.

“Carta General de la Provincia de Cautín” (1916) and “Carta General de la Provincia de Malleco” (1917), both after Nicanor Boloña.

Jaime Flores. “La construcción de espacio. Una mirada histórica al territorio cordillerano de La Araucanía. El territorio andino de la Araucanía, concepto y antecedentes”, in Fronteras en movimiento e imaginarios geográficos: La Cordillera de Los Andes como
Flores, “La construcción de espacio,” 435: “in addition to the military purpose that motivated the various military expeditions that were entering La Araucanía, there was an important exploratory and discoverer component. In this context, the exploratory expedition that accompanied the army advancing towards the occupation of Villarrica, was created by Supreme Decree of November 29, 1882. (...) The scientists determined a series of geographical coordinates, exact astronomical positions of several cities, forts, river passes and mountain peaks from Angol to Villarrica and Valdivia, were fixing these diffuse spaces, constituting a national territory for Chile”

Jaime Rosenblitt and Carolina Sanhueza, Cartografía Histórica de Chile 1778-1929. (Santiago de Chile: Biblioteca Fundamentos de la Construcción de Chile, 2010).

“Plano de la colonia de Traiguén” (1881); “Plano de la localidad de Perquenco” (1888); “Plano de la colonia de Purén” (1898); “Plano Quepe-Calbuco” (1898); and “Croquis de los terrenos divididos en hijuelas, situados entre los ríos Malleco y estero Dillo” (1893).

“Hijuela entre los ríos Renaico y Malleco. Angol” (1874) and “Plano N° 2 de Carahue: de las hijuelas al sur del río Imperial desde cerca de Pancul hasta el mar: Remate de 1893”.

“Croquis del valle central de la Araucanía con los caminos seguidos por las divisiones que lo han cruzado” (1869); “Croquis de la línea del Malleco y nuevos fuertes de Cautín” (1869), and “Plano del territorio entre Renaico y Malleco con demostración de la línea de alta frontera” (1870).


Original title: “Plano de Arauco y Valdivia con la designación de la Antigua y nueva Frontera contra los indios” (1870). Also see Correa and Mella, “El territorio mapuche de Malleco”, 41: "represents the advances of the Chilean army around 1870, specifically the fortification of the Malleco river, in which a detailed description of the living in the area to be occupied is shown, as the geography of the place, the line of forts across the river is drawn, the hills of Nielol, Pidenco, the distribution of the arribanos, moluches (precordilleranos), abajinos, the location of Quilapan ... [ ]"

Correa and Mella, “El territorio mapuche de Malleco”, 26: "the Military Occupation of La Araucanía, the euphemistically called Pacification of La Araucanía, had been decided, it was already a state decision, it had acquired the category of what is now called a country company, and it was they will allocate multiple efforts, mainly economic and military”

35 Saldivia, “Francisco Vidal Gormaz”, 6: “with the scientific information obtained by Vidal Gormaz and others, about the physical and coastal body of the areas of Arauco, Valdivia and Chiloé; delivered through its official reports and cartographic surveys, contributes to the policy of territorial expansion of the State”.

36 Flores and Azócar, “Mapas para el Estado”, 16: The authors mention that in addition to the detailed description of natural elements also represent human aspects and the identification of strategic places with a prominent military presence. In this way, the strategy of conquest through this detailed plan lies in representing the occupation dynamics of La Araucanía, since it "manifests the intention to advance in the Mapuche military conquest and defeat where detailed geographic knowledge played a gravitating role. At the same time, it constituted a diagnosis of the potentialities of its resources and a projection of the idea in which the forts were also thought of as the germ of future cities”

37 “Plano de las costas de Chile” (1855) by Vidal Gormaz.

38 Alejandra Vega. Los Andes y el territorio de Chile en el Siglo XVI: Descripción, reconocimiento e invención. (Santiago de Chile: Dirección de Bibliotecas Archivos y Museos DIBAM. Centro de Investigaciones Diego Barros Arana, 2014), 296-297: “(...) it has been said that the capacity to name and describe are attributes of power and, as such, they are not distributed in a homogeneous manner among the members of a society. It is necessary to remember that the recreation of the territory in the language of the conquerors did not end with the indigenous territorialities in the colonial space of Chile. In parallel, and more silently for the purposes of the revised documentation, other ways of interpreting the territory were recreated among the indigenous populations, which plunged their roots in the diverse pre-Columbian traditions re-read from the colonial experience. However, the subordinate position of these groups impeded the validation in the cartographic discourse of these interpretations of the territory”