Eliminating white spots: a dismantling of Curt Nimuendajú's indigenist cartography

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ABSTRACT

This article reflects on the construction of Curt Nimuendajú's "Ethno-historical map", an exhaustive work that sought to map the native groups of South America. This map was one of the most widely-used representations by researchers since its creation in 1944. The theoretical framework adopted in this paper stresses maps as rhetorical constructs that should be read as texts. The article also discusses the limits and possibilities of a visual vocabulary to understand explicit and implicit theoretical and methodological decisions in cartography. Digital cartography will be employed to bring out the differences between what the author of the project intended and what was presented in the "Ethno-historical map". The text starts with a description of the work and its most evident options, showing a relative selectivity in Nimuendajú's choices. In the last part, technical procedures will be abandoned to interpret the results considering the new critical cartography and ethno-geography positions.

KEYWORDS

Cartography;Ethnography; Rhetoric.

The purpose of this article is to discuss the cartographic representation of indigenous groups, and to do so, we will explore the choices made by Curt Nimuendajú, author of the "Ethno-historical Map", who exhaustively sought to locate the main native groups in South America. It was undoubtedly one of the most used representations by researchers in Brazil since it was made in 1944, and following it, this map has been (re)published and (re)used in different graphic forms, media (digital or printed), and platforms, but always with the same content.

We will take as inspiration the work of Brian Harley (1989), who starts from the notion that maps are rhetorical constructs which should be read as texts. Harley was concerned with the naturalized way maps were usually consumed in a context of widespread discussion of social theories. This naturalization appeared both in the technical character of cartography, which, according to the author, suffered from an "ontological schizophrenia" and in the way maps were interpreted epistemologically, since maps were usually interpreted in a mild way, with few criticisms of the composition of their epistemic nature, thus forming a consolidated consensus of what a map was.

There was also the context of the emergence and diffusion of "Geographic Information Systems" (GIS), which reinforced the technical character of cartography and increasingly diminished its artistic face. Harley proposed to interrogate the hidden agendas of maps, starting from insights provoked by his readings of Foucault and Derrida (which he acknowledged were hardly compatible, although inspiring). According to him, "Maps are a cultural text. By accepting their textuality, we are able to embrace a number of different interpretive possibilities" (HARLEY, 1989, p. 7-8).

His goal was to offer an alternative reading to the maps. This new possible interpretation contrasted with existing ones and embraced a criticism towards the notion of reality and representation guided by normative cartographic thinking, guided by a positivist scientification, more concerned with the norms and techniques of cartography. His contribution, therefore, comes with the suggestion of going beyond the rules that govern the universe of maps, based on social theories, and trying to understand them as products arising from a context that overrides the normalization of cartography and social elements that influence that. In this way, Harley (1989) was more concerned with the cultural production of maps than with their faithful adherence to assumptions.

The ideas presented by Harley (1989) come as a counterpoint to the notion that has been created of how a map is constituted, of how it would be the correct way to prepare and interpret it and of the naturalization that has been consolidated

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as to its form and content. However, the author did not want and did not create a "deconstruction" method or technique, emphasizing that a broad strategy of actions should characterize this approach. In doing so, he mentioned works that analyzed coats of arms and decorative art around the letter, while other initiatives questioned the iconographies used to create the notion of "places of interest" in space.

In later work, published *post-mortem*, Harley (1992; 2002) highlighted how indigenous peoples produced maps, both in the strict sense of drawing, and in providing information that would appear on European charts. These native maps – original or in conjunction with European ones – would later be used for the conquest process, while other native maps and even native appropriations of European cartographic techniques would be used to question the advances of the old world, in the quest to reestablish previous hierarchies.

We intend to discuss the cartographic choices and vocabulary adopted by Nimuendajú to express the history of native groups and their spatiality, exploring the limits of cartographic language. Our approach, however, will not be stuck to Harley's proposals, also using tools from the so-called Geographic Information Systems (much criticized by the author, indeed), which seem to us valid for this exercise. In this sense, our article proposes to present the map and its author, making a détour through the so-called critical cartography, in search of elements to reflect the cultural aspects that characterize the production of maps.

Cartography was certainly one knowledge that contributed most to the advance of imperialism throughout history, and is undoubtedly a deeply Eurocentric knowledge. However, this does not invalidate its use for different purposes, even in the opposite direction, when it enables critical readings about colonialist persistence in the production of historical knowledge. While it is certain that our non-indigenous place of speech will determine our point of view, nothing prevents us from de-structuring our own graphic representation of space using other ideas.

The challenge of mapping the native groups of the Americas, a task intended by Nimuendajú, is gigantic and can be summarized in two major problems: 1) native peoples were diverse and had different ways of relating to space; 2) the methods we use to represent the historical process, through cartography, end up falling into a posture tending to Eurocentrism, and it would be relevant to consider other ways of apprehending space, preferably guided by indigenous thoughts. With this in mind, we propose an exercise of analysis, deconstruction, reconstruction, and use of

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Curt Nimuendajú's "Ethno-historical Map," given its position as a paradigm of cartography native peoples of South America, inquiring about the emphases and silences of this map.

Our perspective is essentially interdisciplinary, as we will dialogue with history, cartography, and anthropology in a completely imbricated way. Since the mid-1980s, cartographic language has been the target of many interrogations, and the linguistic turn has cast many doubts on the process of map production, increasingly understood as narrative objects populated with "non-sayings" and with broad objectivist pretensions. The new critical cartography highlights the map as a plural product, the result of a multitude of decisions and contributions (from field collection to its final presentation), with notorious political goals and founded on different epistemologies.

In this article, we will take the following path: the presentation of Nimuendajú and his map, starting with a detailed description of his cartographic narrative. Next, we will use digital cartography tools to dismantle Nimuendajú's map and obtain information about his choices, which the author never presented. Finally, we will discuss the results obtained in the previous step, searching for more dense explanations about the theoretical options present in the "Ethno-historical Map".

Curt Nimuendajú's Map

Curt Unkel, better known as Curt Nimuendajú, was born in the city of Jena, Germany, in 1883. He came to Brazil in 1903 and remained in the latter until his death in 1945, when he was in a Ticuna village in Alto Solimões. During this period, Nimuendajú produced extensive material on indigenous groups, carried out several exploration missions throughout Brazilian territory, and made numerous sales of archaeological and ethnographic objects to Brazilian, North American, and European institutions. Nimuendajú's life trajectory is intertwined with the history and early development of the Brazilian ethnographic field. Roque Laraia even stated that Nimuendajú is "one of the few mythological entities of Brazilian ethnology" (LARAIA, 1988, p. 2; WELPER, 2016, p. 575).

Nimuendajú worked for public agencies such as the Geographic and Geological Commission of São Paulo (Comissão Geográfica e Geológica de São Paulo), where he began his ethnographic exploration activities in the backlands of São Paulo state, and the Service for the Protection of Indians and Location of National Workers

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(Serviço de Proteção aos Índios e Localização de Trabalhadores Nacionais), taking part in pacification missions and in the "indigenous village" of several groups. Welper (2002, p. 105) points out that this relationship between the ethnologist and the Service for the Protection of Indians and Location of National Workers was marked by ambiguities, since Nimuendajú defended the necessity of indigenous groups' preservation, disagreeing with the assimilationist agenda, which was not in line with the Indian Protection Service.

In the same period, he produced a series of articles in which he criticized and opposed the ideas and actions propagated by Hermann von Ihering, who was then the director of the Museu Paulista, on ethnic assimilation of indigenous peoples from the interior of São Paulo, which, according to Nimuendajú, was a process of intrinsic violence that would lead to the extermination of these groups. Nimuendajú also attacked the pacifying initiatives made at the time, claiming that they only promoted the extermination of native peoples in the long and medium-term (WELPER, 2002, p. 54).

Nimuendajú's concern with the destruction of native cultures and his search, often utopian, to preserve them in their "pure" form, were two constant factors in his life. This essentialism was also visible in other moments, such as in his controversy with Jorge Hurley (FIGUEIREDO, 2010). Nimuendajú aimed to protect native groups from Hurley's "civilizing" advances. The context of the indigenist combat seems a key element to understand the process of building the map, but it was certainly not the only one: the environment in which the maps were created was supported by several factors. The creation of maps for third parties (Nimuendajú was already producing them for his investigations) was due to his economic needs.

After his transfer to Belém and his resignation from the Service for the Protection of Indians and Location of National Workers, Nimuendajú found a favorable scenario for the production of ethnographic research, mainly through his relations with the international scientific community in Europe and in the United States, based mainly on the sale of ethnographic and archaeological collections and maps. This enabled Nimuendajú to obtain the necessary funding for his expeditions, since he did not have very clear links with institutions, where he sought artifacts to compose these collections and collect data for his research. His fieldwork was done by building relationships and identifications between him and the indigenous people, with the ethnologist actively participating in religious rituals and relying on his main informants as "friends," "brothers," "loyal companions" (WELPER, 2002).

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Nimuendajú gradually created relationships with the National Museum (Museu Nacional) and, through the initiative of Heloisa Alberto Torres' management at the museum, this interlocution became continuous. She financed several expeditions and the third and last map. This interlocution was not a friendship, nor a more intense professional relationship and only allowed the National Museum to compete with external funders (WELPER, 2002). Curt Nimuendajú, despite being recognized as an important ethnologist at the time of the institutionalization of the Brazilian anthropological field, declined proposals to become more directly involved in scholar activities. The self-taught character of his career and his predilection for fieldwork played a significant role in this refusal. However, in the final years of his life, facing financial problems, Nimuendajú began teaching at the Goeldi Museum (Museu Goeldi) and at the National Museum. He also accepted commissions to produce the three versions of his "Ethno-historical Map" in the same period. The research activities became his main source of income due to his difficulty collecting and selling new ethnographic materials to museums abroad.

Curt Nimuendajú is often characterized in biographies as both a researcher and a craftsman. It is important to note that these facets came together harmoniously in producing his "Ethno-historical Map. Nimuendajú not only carried out a thorough research work in the search for information about the indigenous groups, but also did all the manual work of drawing the map, from the initial sketches to the final version of the work.

The first version was produced in 1942 for the *Smithsonian Institution,* with the aim of being published in the *Handbook of South American Indians*, and was used in the chapter *"Eastern Brazil: an introduction"*, by Robert Lowie (LOWIE, 1946). The second, made in 1943, was intended for the Emílio Goeldi Museum. The last version, from 1944, was destined for the National Museum in Rio de Janeiro. None of these three versions is the same as the others, and the National Museum's version is the most complete.

The "Ethno-historical Map" was one of the most extensive works carried out by Curt Nimuendajú. This cartographic representation results from the synthesis of a great variety of ethnographic data, locations, migratory processes, and linguistic trunks of indigenous groups in Brazil. According to the author, this map differs from other ethnogeographic productions in that it seeks to combine geographical issues with a historical perspective, avoiding anachronisms related to the representations of native groups. Curt Nimuendajú used multiple bibliographic sources, correspondence, and personal notes from various researchers and indigenous people together with his own notes, studies, and field observations to create his map.

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Nimuendajú had a hard task, since he faced the material and technological restrictions of the time for cartographic production and representation. The author himself complained about his technical limitations when he stated that he wanted to have a different color for each of the language families represented on the map, which was not possible. Even though he recognized that this was an inconvenience, he did not find a viable solution to the problem (NIMUENDAJÚ, 1981, p. 41). There is also the clear challenge of how to represent succinctly and clearly the large volume of information accumulated during the research, in addition to the original size of the work, which was approximately 1.80m by 2.00m.

These particular characteristics of the "Ethno-historical Map" were challenges faced by Nimuendajú during the production of the map and for the people and institutions interested in the reproduction of this work. Rodolfo Barbosa (1981, p. 25) states that it is likely that Nimuendajú had no plans for publication, since the author was not careful with the technical problems of reproducing the original, such as the quality of the paper and the large size of the map, the small letters, and the diversity of colors used, factors that made it difficult to reproduce the map.

There is a long history of attempts to reproduce the "Ethnohistoric Map'', practically from its first production to the present day. The first one was the aforementioned version commissioned by the *Smithsonian Institute*, considered by the editor at the time, Julian H. Steward, to be excessively detailed, large and full of color to be published in its entirety. Thus, as can be seen in Figure 1, the solution was to reproduce the work in black and white, divide it into three parts and suppress its linguistic indications (EMMERICH; LEITE, 1981, p. 30).

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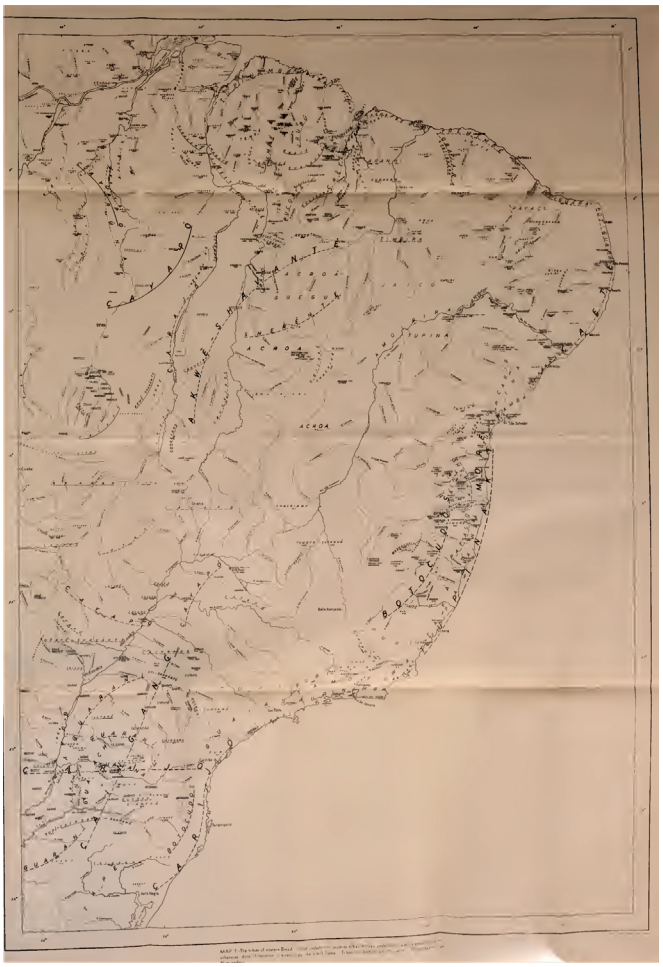
Figure 1 - First version of Nimuendajú's Ethno-historic Map



Source: LOWIE, 1946, p. 382-383.

In Brazil, after the production of the versions commissioned by the Goeldi Museum and the National Museum, there were consistent attempts to reproduce the "Ethno-historic Map" for a larger number of people, but they all encountered the same problems faced by the *Handbook of South American Indians* (EMMERICH; LEITE, 1981, p. 31). Only in the mid-1970s, through George Zarur's proposal to the National Center for Cultural Reference (Centro Nacional de Referência Cultural), resources were made available and enabled the publication of the map, culminating in 1981, through the joint work of the National Museum and the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística), in the release by the National Pro-Memoria Foundation (Fundação Nacional Pró-Memória) of the first edition of this work. Using the Goeldi Museum and the National Museum maps as the basis for publication, this edition was reprinted in 1987 and in 2002, and all prints run were sold out.

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A new edition was produced in 2017, through a partnership between the National Historical and Artistic Heritage Institute (Instituto do Patrimônio Histórico e Artístico Nacional), Brazilian Institute of Geography and Statistics, and the Federal University of Pará (Universidade Federal do Pará). Again, the basis of the work were the versions of the Goeldi Museum and the National Museum, but now with the use of new technologies and with a graphic and editorial proposal different from the 1981 publication. This chronology of the "Ethno-historical Map" publication shows the relevance given to Nimuendajú's work in Brazil, where several public institutions and scholars have partnered to make possible the publication of this work since the production of its versions in the 1940s to the present day.

Nimuendajú believed that his map should be in a constant state of improvement. His work should not be seen as a crystallized final product, but rather as a dynamic instrument in a constant process of enhancement. In the different versions, there was a concern not only to make reproductions of the same work for different institutions, but to make changes and improvements to each new version produced, such as, for example, changing from one to another the linguistic classification of an ethnic group due to new information acquired, or changing the locations of groups from one version to another (BARBOSA, 1981, p. 23). The index is also a sign of improvement between versions. The basic index of Nimuendajú's work contained approximately 1,100 indigenous groups and 818 bibliographic references, whereas the index of the National Museum contained approximately 1,400 indigenous groups and 972 bibliographic references (EMMERICH; LEITE, 1981, p. 31). There was a considerable expansion of the references used and the identification of native peoples.

Along with this perception of the map as something in constant transformation, there is the research work carried out by Curt Nimuendajú. According to scholars of this work, Nimuendajú produced and sought sources for his cartographic representation of Brazilian indigenous groups in the following way:

> He based his work on a huge personally gathered data collection, on trustworthy bibliographical references, and in information that he relentlessly requested from all who carried out studies in tribes with which he had no direct contact. He usually obtained this data by requesting or sending sketches to his collaborators so that they would mark the referred locations there (EMMERICH; LEITE, 1981, p. 30).

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This search for improvement and a large volume of information resulted in a study with a vast diversity of information related to the indigenous groups up to that time. Curt Nimuendajú's work was not just a geographical map: it was a complex of spatially articulated data, which today we call a Geographic Information System (GIS). The map itself included a diversity of data in terms of colors, shapes and styles. It also had chronological information, with dates assigned to the native groups, ranging from specific years and centuries, which would be reasonable, since it worked with rather imprecise historical sources.

A central aspect that Curt Nimuendajú wanted to represent was the relationship between the geographical issue and a historical and linguistic perspective. When visualizing the "Ethno-historical Map," something that calls attention is the wide variety of colors used. This profusion of shades was intended to graphically signal the linguistic classification of the groups identified in the cartographic representation. Nimuendajú categorized native languages into three types: isolated languages, unknown languages, and language families. In the Figure 2, this system is clear, in which the orange lines represent the languages classified as isolated, the non painted group names are the so-called unknown languages, and the other colors that appear are some of the shades used to represent the families linguistic:

Figure 2 - Example of a fragment of the "Ethno-historical Map"

Source: NIMUENDAJÚ, 1981, booklet.

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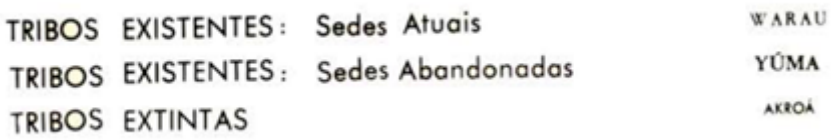
In addition to presenting this information related to linguistic trunks, Nimuendajú also tried to represent the dynamism of indigenous territorial occupations over time. He placed on the same map native groups that existed in Brazilian territory at different times and tried to demonstrate this graphically, pointing out different temporalities of indigenous occupation in space. As can be seen in Figure 3 below, one of the ways that he tried to convey this historical perspective was the use of different typographies to indicate the "current locations of tribes", "abandoned locations", and "extinct tribes".

Figure 3 - Exemplification of the different types of letters used on the map



Source: NIMUENDAJÚ, 1981, booklet.

Another tool applied to mark these temporal differences was the use of dashes in the group names. A thicker line indicated existing groups with "current location", a thinner line for "abandoned location", and a dashed line marked groups that no longer existed, and also placed below the name of some peoples the date of the information that made him mark such a group in a certain place.

Attached to the map were two large indexes: one for "tribes" and one for "bibliographic". The "tribes" was the most complex of all, because it mentioned the quadrants where the groups were and which bibliographic works had been used to identify them. As shown in Image 4, the Abaeté, who was in quadrant F6, were marked with the help of the work "27", which corresponded to the work of Alfredo Moreira Pinto, "Apontamentos para o Diccionario Geographico do Brasil", in the bibliographic index.

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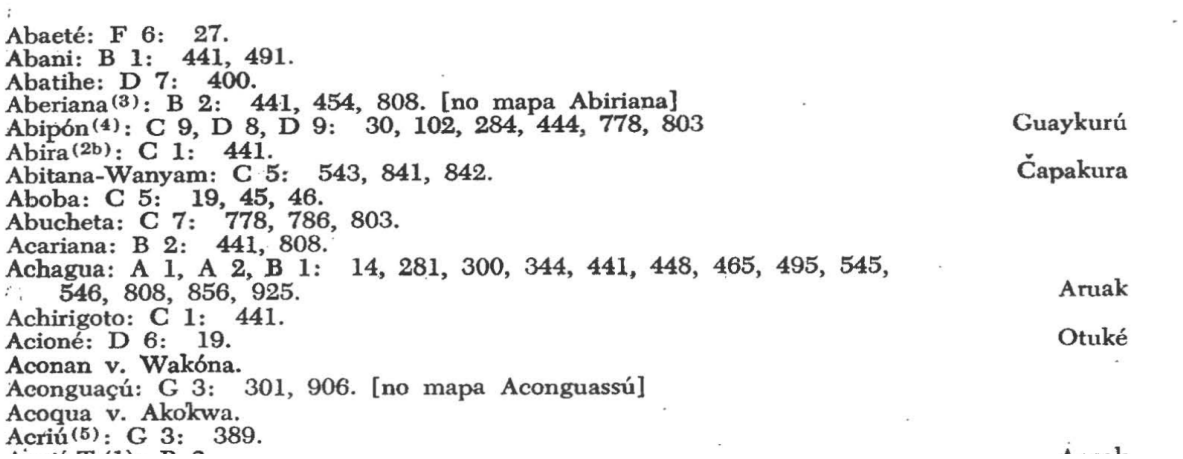
Figure 4 - Fragment of the "Index of Tribes" from Nimuendajú's Ethno-historical Map

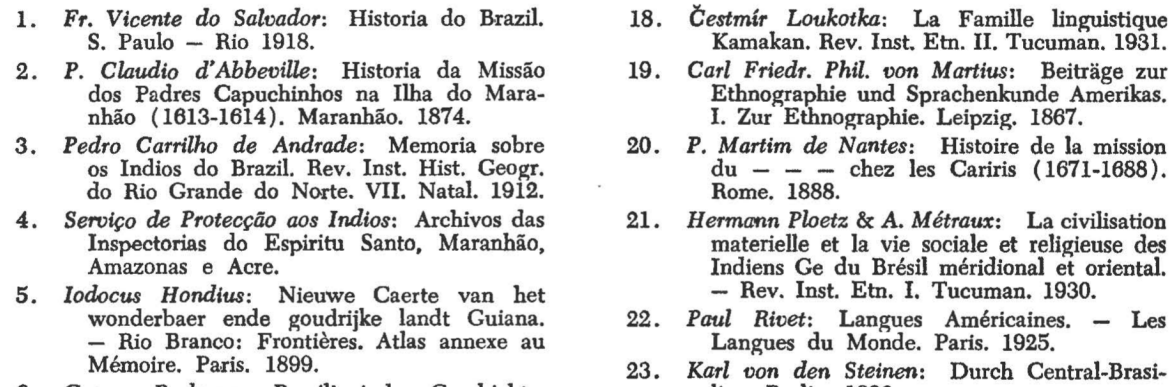


Abaeté: F 6: 27.
Abani: B 1: 441, 491.
Abatihe: D 7: 400.
Aberiana(3): B 2: 441, 454, 808. [no mapa Abiriana]
Abipón(4): C 9, D 8, D 9: 30, 102, 284, 444, 778, 803 — Guaykurú
Abira(2b): C 1: 441.
Abitana-Wanyam: C 5: 543, 841, 842. — Čapakura
Aboba: C 5: 19, 45, 46.
Abucheta: C 7: 778, 786, 803.
Acariana: B 2: 441, 808.
Achagua: A 1, A 2, B 1: 14, 281, 300, 344, 441, 448, 465, 495, 545, 546, 808, 856, 925. — Aruak
Achirigoto: C 1: 441.
Acioné: D 6: 19. — Otuké
Aconan v. Wakóna.
Aconguaçú: G 3: 301, 906. [no mapa Aconguassú]
Acoqua v. Akokwa.
Acriú(5): G 3: 389.

Source: NIMUENDAJÚ, 1981, p. 45.

One can notice that there was a reference to the quadrant and the numerical reference to the sources next to each group. In all, there were more than 1,400 "tribes" (in Nimuendajú's words), identified with 973 reference works (bibliography and primary sources), totaling hundreds of authors. In Image 5, it is possible to see a sample of the organization format of the indexes.

Figure 5 - Fragment of the "Bibliographic Index" from Nimuendajú's "Ethno-historical Map"



1. *Fr. Vicente do Salvador*: Historia do Brazil. S. Paulo — Rio 1918.
2. *P. Claudio d'Abbeville*: Historia da Missão dos Padres Capuchinhos na Ilha do Maranhão (1613-1614). Maranhão. 1874.
3. *Pedro Carrilho de Andrade*: Memoria sobre os Indios do Brazil. Rev. Inst. Hist. Geogr. do Rio Grande do Norte. VII. Natal. 1912.
4. *Serviço de Protecção aos Indios*: Archivos das Inspectorias do Espiritu Santo, Maranhão, Amazonas e Acre.
5. *Iodocus Hondius*: Nieuwe Caerte van het wonderbaer ende goudrijke landt Guiana. — Rio Branco: Frontières. Atlas annexe au Mémoire. Paris. 1899.
18. *Čestmír Loukotka*: La Famille linguistique Kamakan. Rev. Inst. Etn. II. Tucuman. 1931.
19. *Carl Friedr. Phil. von Martius*: Beiträge zur Ethnographie und Sprachenkunde Amerikas. I. Zur Ethnographie. Leipzig. 1867.
20. *P. Martim de Nantes*: Histoire de la mission du — — — chez les Cariris (1671-1688). Rome. 1888.
21. *Hermann Ploetz & A. Métraux*: La civilisation materielle et la vie sociale et religieuse des Indiens Ge du Brésil méridional et oriental. — Rev. Inst. Etn. I. Tucuman. 1930.
22. *Paul Rivet*: Langues Américaines. — Les Langues du Monde. Paris. 1925.
23. *Karl von den Steinen*: Durch Central-Brasi-

Source: NIMUENDAJÚ, 1981, p. 69.

These tables, corresponding to each other, were enough for us to know where each group was and which sources were used in the research, even though certain groups were identified with different sources, making it difficult to know exactly in which works Nimuendajú looked for information to locate them in time and space. The complete map resulting from this work can be seen in Figure 6, below:

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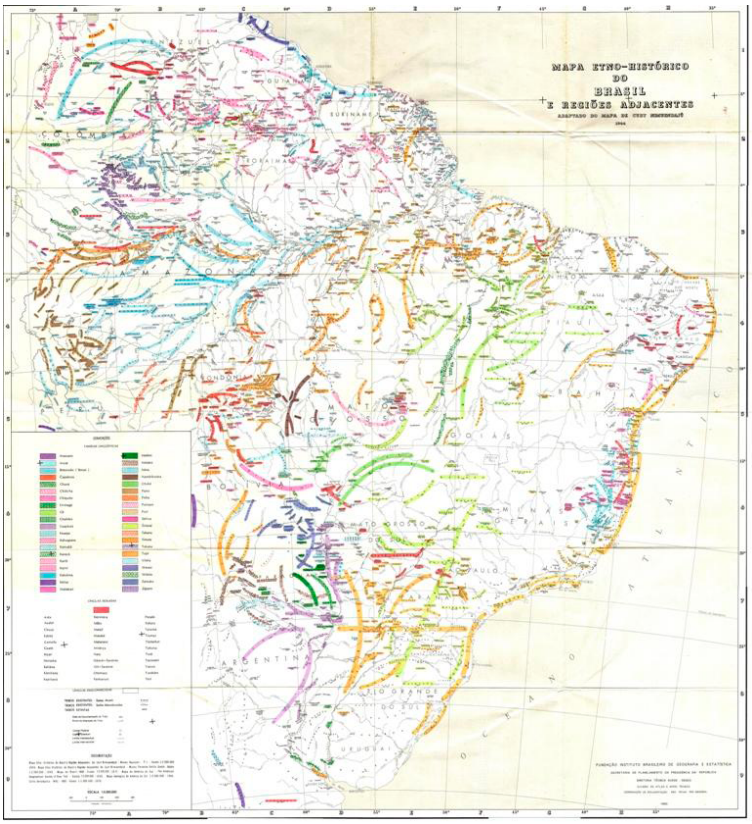
Figure 6 - Ethno-historical Map (full image)



Source: NIMUENDAJÚ, 1981, booklet.

Let's look at a detail of the map to understand its making. It is possible to see that the groups are presented on the same plane, albeit historically separated. In the left corner (Image 7) we have a reference to the Tamoyo 1597, which would have been there at that date according to some of the sources used by the author. It is possible to see an arrow at the very center, a visual element used by Nimuendajú to indicate migrations. Some groups are presented in larger letters and often in the form of a transverse "banner" (with a slight curvature) to indicate a wide area of activity for the natives and to suggest some inaccuracy.

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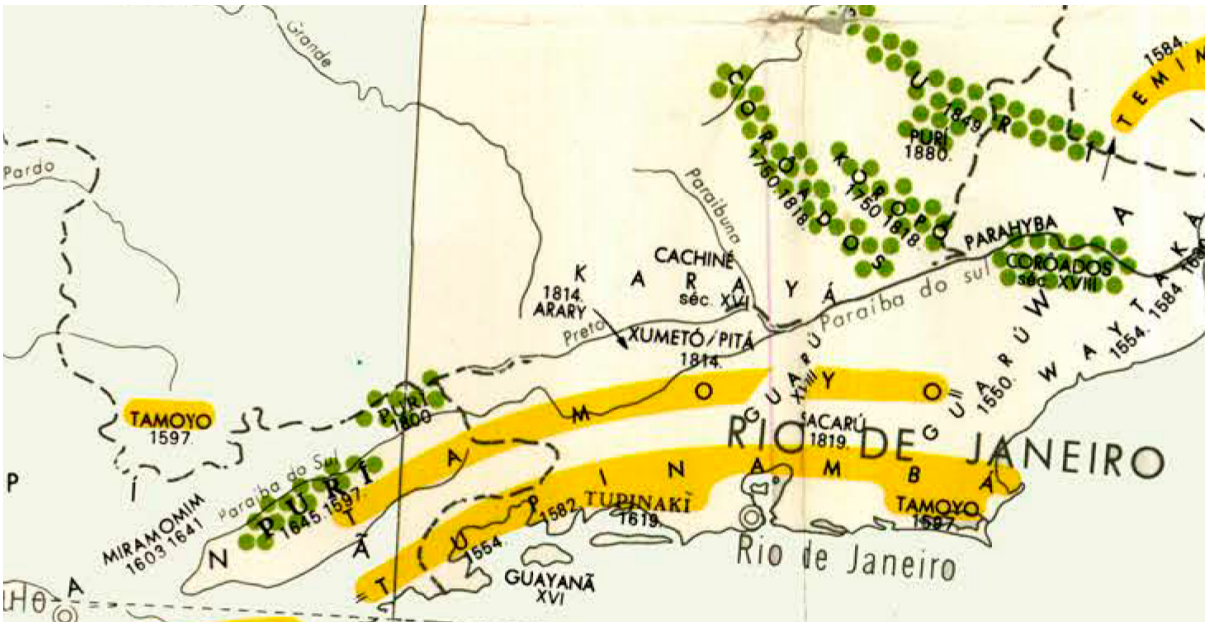
Figure 7 - Highlighting the banners used by the author to represent information



Source: NIMUENDAJÚ, 1981, booklet.

These were the author's ways to suggest the notion of the incompleteness of the sources or the lack of geographic accuracy and, most likely, the way the group moved within a larger area. Nimuendajú realized that the groups he studied behaved differently from what traditional maps were prepared to represent, and he tried, in his way, to subvert ethnocentric cartography by using these spatial resources as a way to indicate these differences. At the same time, it is an indigenist map, in the sense of populating the space with original groups and against the current State or the European conquest. The emphasis is on original and current indigenous villages, without indicating that they belonged to the past. Native peoples and the Nimuendajú map itself transcend national and state borders. The basis for locating indigenous groups was hydrography. It should be noted that Nimuendajú wanted (and had marked) the boundaries in a second, less visible layer (BARBOSA, 1981), which reinforced the argument that he wanted to give indigenous materiality to the current design, and not project the current onto the indigenous past. Cities (such as Rio de Janeiro in the fragment above) and current boundaries appeared on the map, but occupied an obvious background.

It is difficult to estimate what cartographic influences guided Nimuendajú's creation. The cartography of the time did not provide many ideas about mapping native groups, and even the *Handbook of South American Indians* did not bring great innovations, with Nimuendajú's map being one of the most interesting in this work. The techniques used by him, indicating text banners to point out the "broad" location of native groups,

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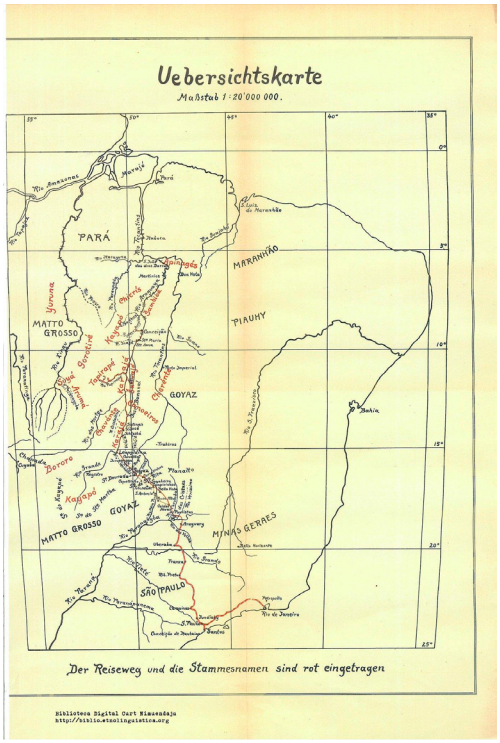
were already used by Martius and Spix in the works presented in "Viagem pelo Brasil", from the beginning of the 19th century. Since this was an important ethnographic reference in Nimuendajú's work, it would be quite likely that it was an inspiration also in cartographic terms. In fact, Nimuendajú uses a system very similar to that of Martius and Spix, with large labels indicating the native groups placed transversally in space, lacking only the colors.

It is possible to point out other contemporary productions that probably inspired him or at least pointed to the types of available representations. One of these maps is that of Fritz Krause (Figure 8), present in the work *"In den Wildnissen Brasiliens"*, 1911, which describes Krause's trip through Brazil with indications of the indigenous peoples he visited, and appears as one of the references used in the "Ethno-historical Map". Therefore, it is likely to have served as some form of inspiration. However, it does not bear much resemblance to Nimuendajú's work beyond the manner of situating native peoples by name, here also in the form of banners of text without boundaries.

Figure 8 - Panoramic map published in Krause, 1911, "In den Wildnissen Brasiliens



Source: KRAUSE, 1911, booklet.

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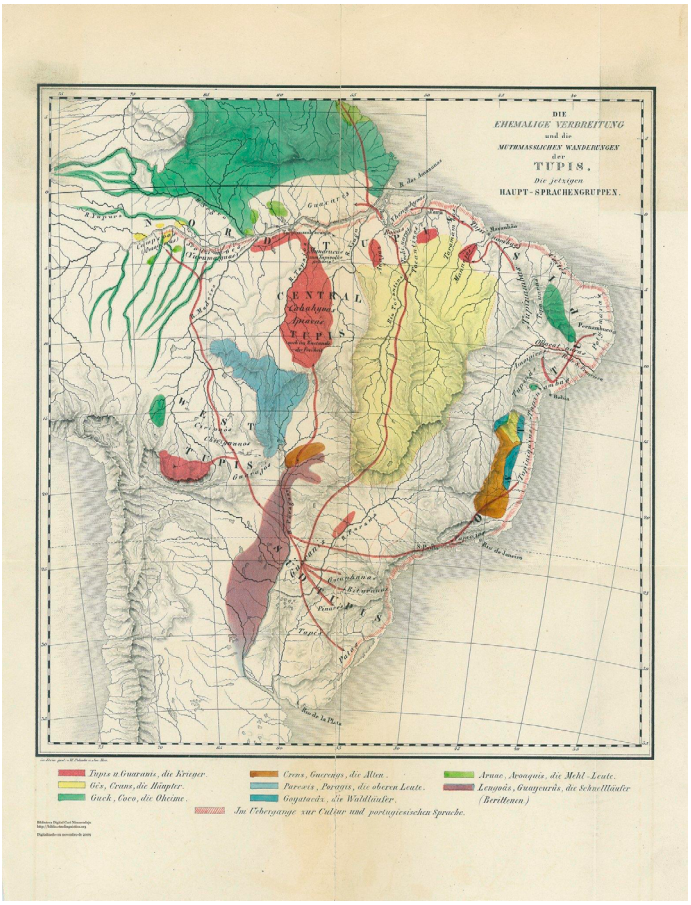
Another work that can be observed is Von Martius' Ethnolinguistic Map (Figure 9), a representation that accompanies the first volume of *"Beiträge zur Ethnographie und Sprachenkunde Amerikas zumal Brasiliens"* (MARTIUS, 1867), one of the most used works by Nimuendajú. The similarities begin with the use of colors and extend to the idea of representing linguistic families and the attempt to point out the displacements of the Tupi throughout the Brazilian territory, the main difference being the way that indigenous groups are represented: circumscribed in clusters.

Figure 9 - Von Martius' ethnolinguistic map



Source: MARTIUS, 1867, annex.

This form of representation differs from the way chosen by Nimuendajú to portray the natives in his "Ethno-historical Map," in which they are located with "open" text banners, without pointing out a clear territorial delimitation (which would be an evident Eurocentric posture). These clusters, however, appear in work supposedly authored by Nimuendajú present in the article "A questão dos índios no Brazil", by von Ihering (1911). Nimuendajú claims authorship of this map in a letter of 1944 (NIMUENDAJÚ, 1948, p. 216). If this is the case, it demonstrates a clear shift in the

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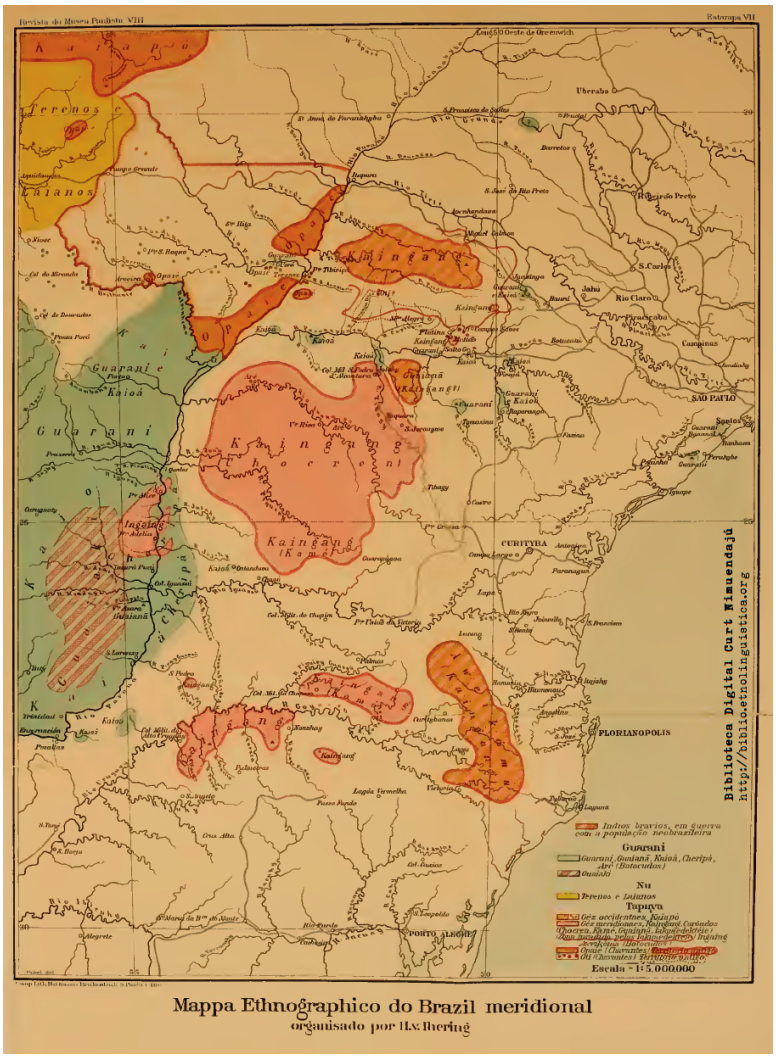
cartographic representation made by the ethnographer from one map to another. As can be seen in Figure 10, he would have moved from a style present in the mature work of Von Martius (*"Beiträge..."*) to the style of the young Martius in company with Spix ("Viagem pelo Brasil").

Figure 10 - "Mappa Ethnographico" of southern Brazil



Source: VON IHERING, 1911, p. 141.

The dismantling and analysis of Curt Nimuendajú's map

"We dismantled" the set of the "Ethno-Historical Map" using digital procedures. This is not a strict application of Harley's ideas, on the contrary: the dismantling process

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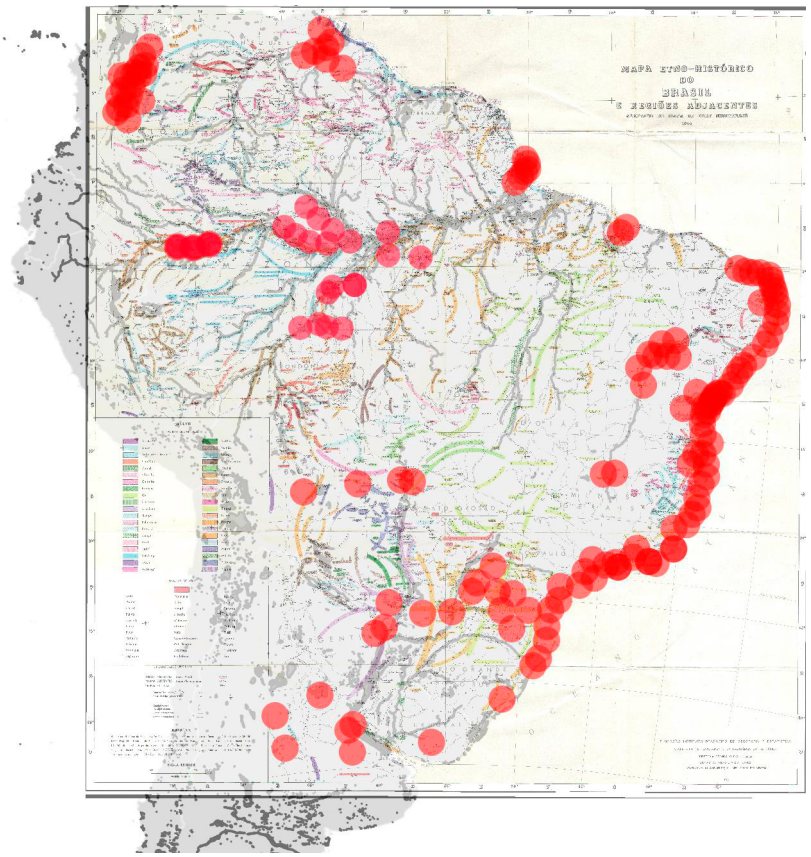
has the fundamental help of a GIS, an approach of which the author was a profound critic. Even so, we believe that the practice allowed by digital cartography has allowed some considerable advances in the direction of "deconstructing" the map, as Harley wanted.

We have adopted, to some extent, the empirical (and empiricist) procedures employed by Nimuendajú. A database was created for each of the indexes, and the "Ethno-historical Map" was georeferenced. We used a level of data granulation that made it possible to know which authors were most used in the set, by group, by period, or by all these criteria at the same time, in such a way that we could evaluate how much Nimuendajú chose from each one of them or for which regions. The concern with these metrics is intended to reveal what the map and its presentation hide, which concerns the author's preferences and the way he ignored certain information, without this being presented or discussed. All the data have been mapped. Our cartographic representation intends to bring out the differences between what the author stated and what he "said" cartographically (Figure 11).

Figure 11- Georeferenced Ethno-historical map with current map overlay. The highlight for the dots in red, representing 16th-century information filtered from the original map



Source: Own authorship.

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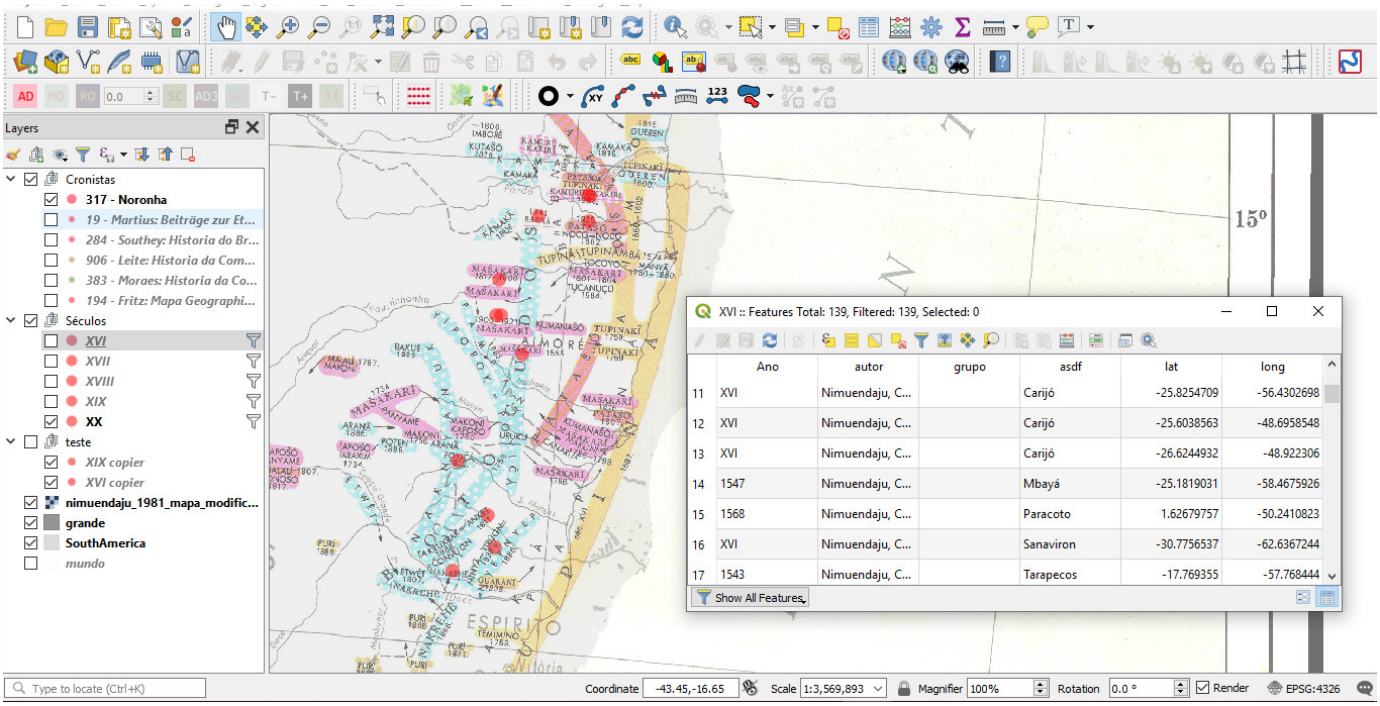
As the groups were related to authors and bibliographies, it was possible to know, as can be seen in Figure 12, the spatial scope of each author, that is, to create an overview of the sources used by Nimuendajú, which allowed to observe some limitations of the map. These were visual components that would be very difficult to see directly in the original.

Figure 12 - "Ethno-historical map" of Nimuendajú in the geoprocessing software, highlighting the data table created and organized with the data from the "Indexes" present in the original work



Source: Own authorship.

The way Nimuendajú organized his data made much of it diluted. We cannot know, for example, which source the author used for a specific group in a given period, or even for which regions. We only know the information used for the set across the entire period or space. Therefore, we cannot know how migrations and displacements were detected, something highlighted with arrows on the map. Still, it is possible to notice several choices made by Nimuendajú in his cartography. Let's start with the chronological cut: as previously mentioned, dating information appears both with specific years and whole centuries. This seems to have been more than an option, an adaptation of the author to what was available in his documentary repertoire. Nimuendajú's work ends up "flattening" the entire chronology. We have, side by side, very different time periods, as can be seen in Figure 13:

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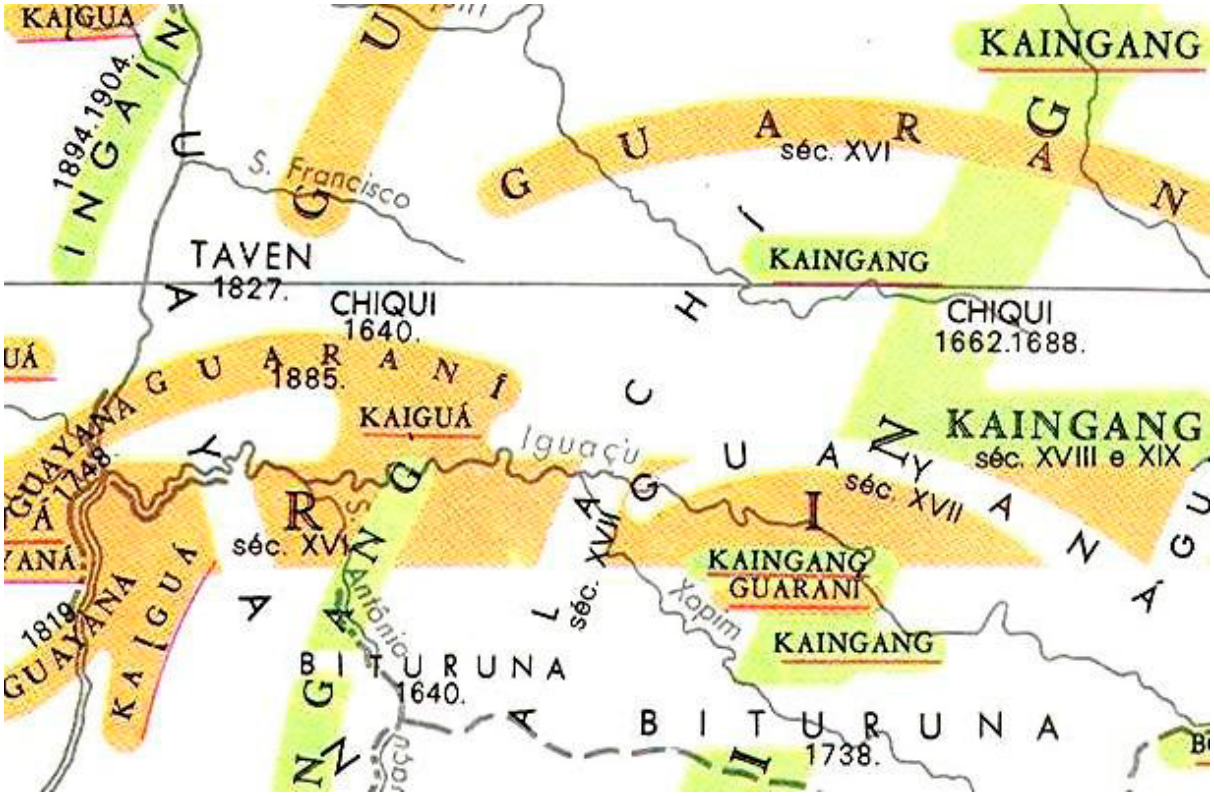
Figure 13 - Highlighting the system of dates used by Nimuendajú, indicated below each ethnonym



Source: NIMUENDAJÚ, 1981, booklet.

Therefore, we have many indigenous groups that are geographically close to each other, but that occupied those areas in different temporalities (years, decades, centuries). Thus, Nimuendajú homogeneously occupied the blank spaces with very discrepant periods. The arrows used to point out migrations only accounted for the groups in relation to themselves. We tried to "dismantle" the map in layers starting from the chronology, in samples of a century. We chose this cutout because, while some groups appear dated by specific year, others are dated by century, as we can see in the image above, that is, by a characteristic of our source. The division by century also helped in the perception of long-term trends that were previously difficult to read given the accumulation of time in space.

Taking Nimuendajú's dataset georeferenced by our team, we arrive at the result of Figure 14, with all groups represented synchronously.

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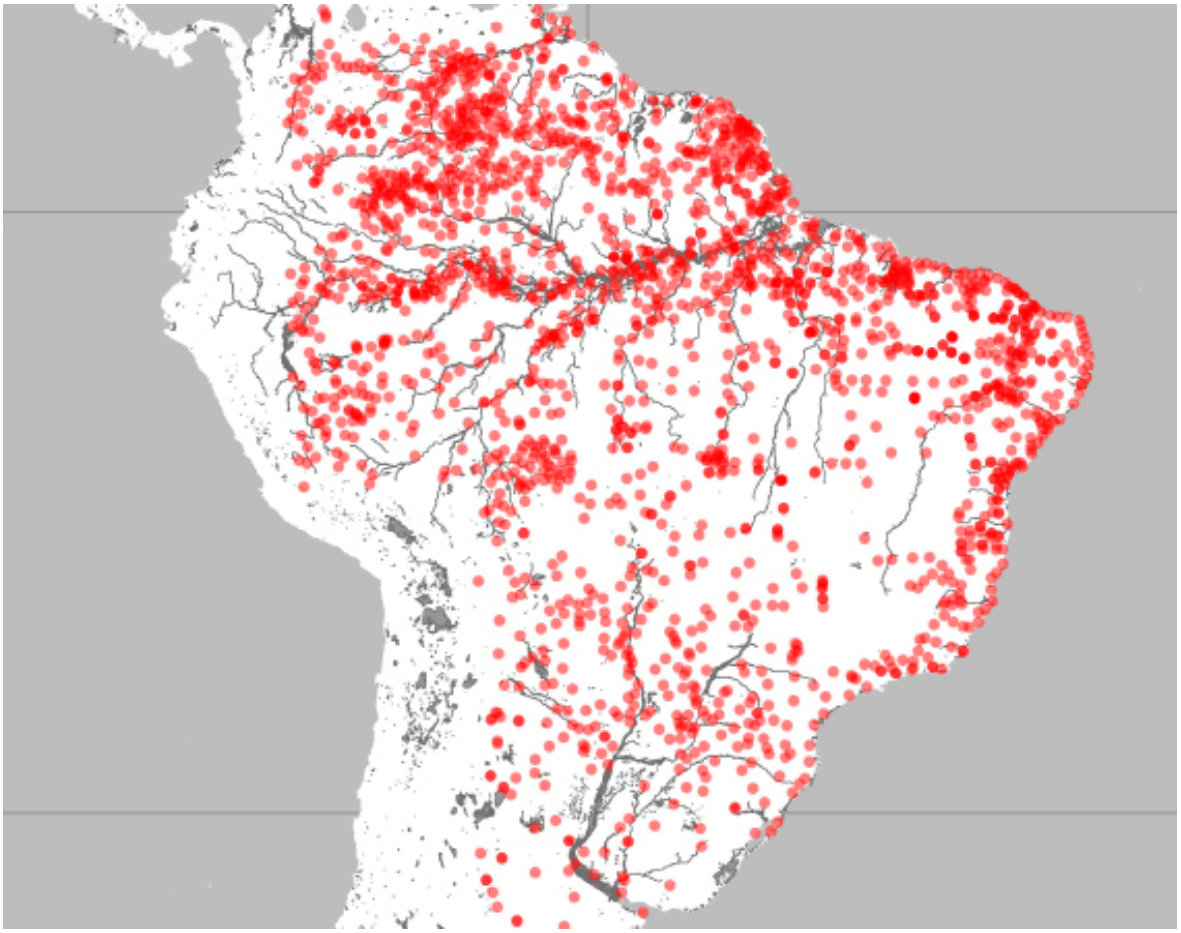
Figure 14 - Set of georeferenced points based on the "Ethno-historical Map



Source: Own authorship.

This image presents a dense and impressive work, the fruit of Nimuendajú's obstinate empiricist efforts in search of new tools. When separated by century, however, the image is surprising. The chronologically "flattened" figure produced by Curt Nimuendajú reveals other particularities, acquired by the author's own way of working, as shown in Figure 15, Figure 16, Figure 17, Figure 18 and Figure 19.

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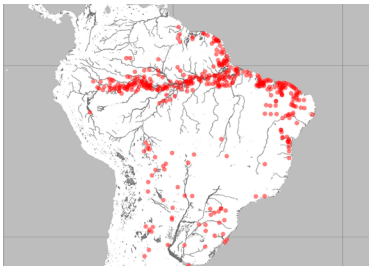
Figure 15 - The georeferenced points divided by century – XVI

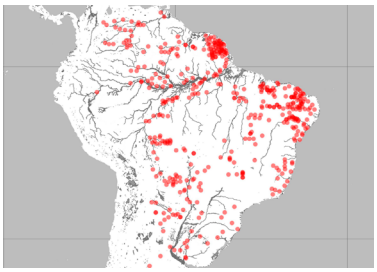
Source: Own authorship.

Figure 16 - The georeferenced points divided by century – XVII



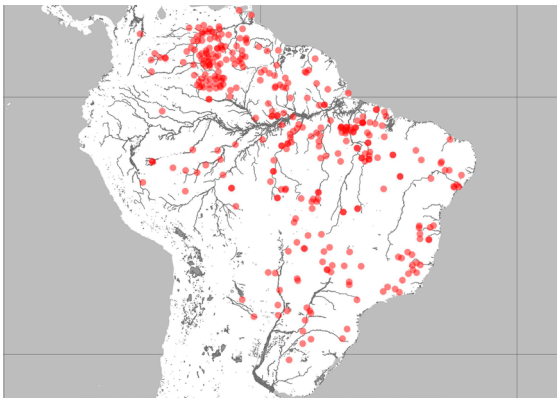
Source: Own authorship.

Figure 17 - The georeferenced points divided by century – XVIII



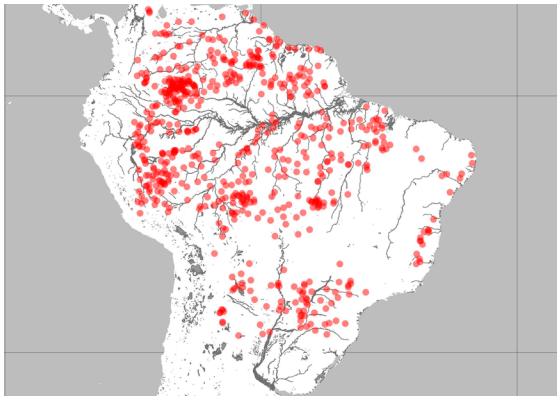
Source: Own authorship.

Figure 18 - The georeferenced points divided by century – XIX



Source: Own authorship.

Figure 19 - The georeferenced points divided by century – XX



Source: Own authorship.

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The result is not a map of the location of indigenous people in Brazilian history, but of sightings of indigenous groups by Europeans. Nimuendajú's work speaks much more of European observers than of natives, as very often occurs in studies of alterity (POMPA, 2003). It is interesting to note the movement generated by the layered separation of a hundred years. The first image (16th century) shows us the coastal groups and makes a gigantic void appear in the backlands, the result of European ignorance of those areas. The 17th-century map highlights trips made in the Amazon by Europeans, while the 18th-century map shows their first attempts at interiorization. Still in this one, we have a coastal approach, no longer oceanic, but now from the great inland rivers, such as the São Francisco and the Paraná. The mapping of the 19th century presents an intensification of the context that emerged in the 18th. The 20th century is particularly interesting, since the generated map forms a kind of "crown", indicating the headwaters of the tributaries of the Amazon River: it was the moment when the indigenists began to search for the most distant groups. In this way, the digital reconstruction of Curt Nimuendajú's map helped us to seek elements to understand the dynamics of its construction, in such a way that the technique contributed to the critique. The author's Herculean effort can be revisited and reconsidered based on the realization of its inevitable limits.

The authors used in the work were more than 900, but they are not used in a homogeneous way. It was noticeable that Curt Nimuendajú sought to use several studies to map each group, even though in many cases this was not possible. Therefore, the same researcher had been used to locate several groups, just as each group was mapped with the help of several names. The most used author is Carl F. Von Martius, with his *"Beiträge zur Ethnographie und Sprachenkunde Amerikas zumal Brasiliens"*. He gave information for the location of 138 groups, especially Tupinambás and Potiguaras. Following this, Robert Southey's *História do Brazil* pointed data to 73 groups, among which the Tupinambás and Potiguaras also stood out. Here it is worth making an observation: we do not intend to present the quantification of authors and native groups in order to create a hierarchy of references used by Nimuendajú (which would not be invalid either), but to highlight an element invisible to the reader of the map - its selectivity - that can help us understand its construction.

Nimuendajú's choices

Let's look at the native groups/authors relationship. The groups with the largest number of references were the Kayapó, with 70, and the Mura, with 43, followed by the

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Tukuna, 38, and the Bororó, 31. Only then appear the Tupinambás, with 29 authors, formed by Martius, Southey and others 27. This kind of information - about which groups have more sources and which are the most used - was not available in reading the "Ethno-historical Map", much less in the qualitative analysis of the indexes. It was only enabled by dismantling the set in a digital system which allows, among other things, to know which regions were described by which research and, at the same time, selected or not by Curt Nimuendajú. In the case of Martius, for example, his narrative covers the groups that, in Nimuendajú's scheme, inhabited the areas indicated in Figure 20.

Figure 20 - Location of points of the set of groups indicated by Martius within the "Ethno-Historical Map

Source: Own authorship.

However, this map does not deal with the areas considered by Martius, but with the places occupied by the groups mentioned by him. The way Nimuendajú constructed his system would not allow such geographical distinction. This weakness does not make the cartography of the authors mentioned by him less interesting. If compared to each other, we can understand a little more about Nimuendajú's use of them. Let's look at other cases, Robert Southey (Figure 21) and Samuel Fritz (Figure 22), two among the most used in the "Ethno-historical Map".

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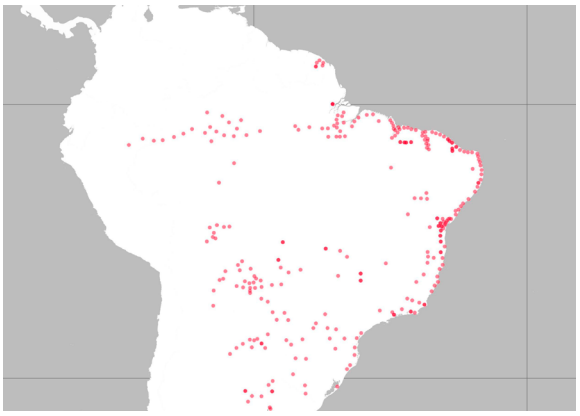
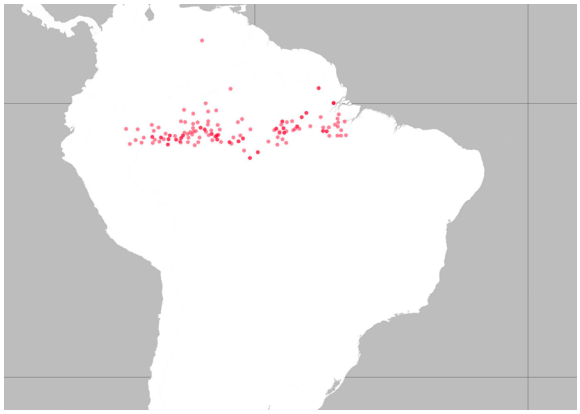
Figure 21 - Location of points of the group set indicated by Southey within the "Ethno-Historical Map"



Source: Own authorship.

Figure 22 - Location of points of the group set indicated by Samuel Fritz within the "Ethno-Historical Map"



Source: Own authorship.

While Southey has a similar pattern to Martius, dealing with groups that occupied various regions of America, Fritz (Figure 23 and 24) mentions groups existing on the banks of the Amazon River. This is relatively easy to explain: Southey and Martius made compilations of data in addition to their own observations. Fritz made a description of his trip at the end of the 17th century, as well as a map of the peoples he described (BN. ARC.030,02,017 - Cartography).

Figure 23 - Samuel Fritz's map and detail of it

Source: FRITZ, 1691.

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Figure 24 - Samuel Fritz's map and detail of it

Fonte: FRITZ, 1691.

This work, based on the material used by Nimuendajú, was also georeferenced, as shown in Figure 25.

Image 25 - Map of Samuel Fritz in the georeferencing process

Source: Own authorship.

The geoprocessing of Fritz's map was done to compare the data presented by him with that made by Curt Nimuendajú, seeking to understand how the latter appropriated the references of the former to map the groups. The result pointed to a large number of groups present on Fritz's map that Nimuendajú ignored. Let us see in Figure 26.

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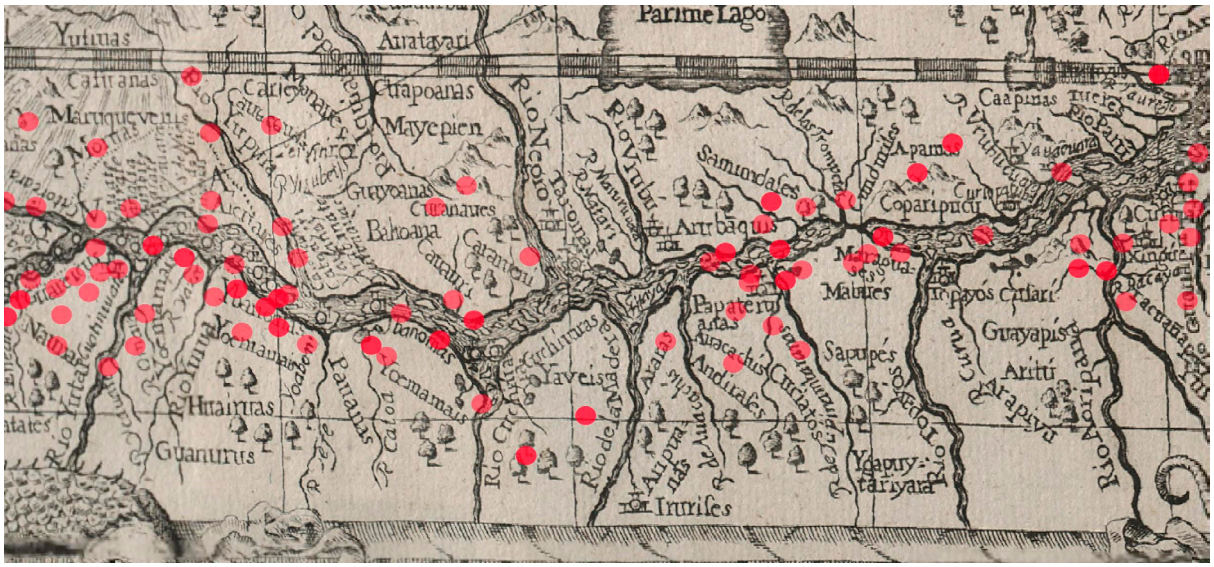
Figure 26 - Samuel Fritz's map in comparison with Curt Nimuendajú's use of Fritz's data in the "Ethno-historical Map"



Source: Own authorship.

It is possible to see that Nimuendajú marked a large number of peoples that were identified on Fritz's map, but ended up ignoring many others, giving preference to those closest to the riverbed, although there are exceptions. With this, we do not wish to point out faults and incompleteness in Nimuendajú work, but rather to indicate its imponderable selectivity. It is difficult and even unlikely to discover the cause of this selection, but it seems evident that Nimuendajú left out a lot of data, not only concerning Father Fritz. Take another example: Father Noronha's report of 1768. Curt Nimuendajú's reference number 317 was used to locate 7 groups on the "Ethno-historical Map", especially the Mura and Tukuna, as seen in Figure 27.

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Figure 27 - Location of points of the set of groups indicated by Noronha within the "Ethno-Historical Map".

Source: Own authorship.

Recent research that used Father Noronha as a reference reached somewhat different results, such as Ramalho and Rendeiro Neto (2016) work, which highlight the richness of Noronha's narrative about indigenous peoples' places, villages and indigenous nations. The presence of mentions to at least 362 native groups in his report confirms the relevance of gathering information on Amerindian diversity and its geographical identification by colonial eyes. Thus, we have before us a great discrepancy regarding the treatment and use of data referring to Father Noronha in the preparation of Nimuendajú's work, as can be seen in figure 28 below.

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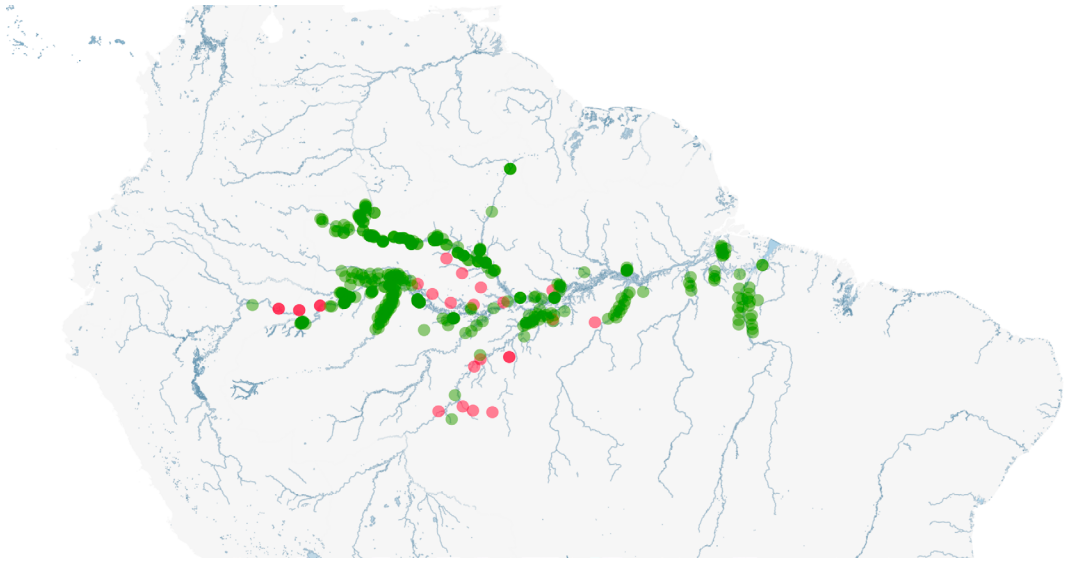
Figure 28 - Contrast between the location of points from the set of groups indicated by Noronha within the "Ethno-Historical Map" (in red) and the points identified by the recent survey by Rendeiro and Ramalho (2016) (in green)



Source: Own authorship.

Some of the chroniclers mentioned in the bibliography were consulted by us and georeferenced directly from their report. This work allowed us to identify sensitive absences in Curt Nimuendajú work, sources used partially and without any explanation. Gabriel Soares de Souza, identified with the number 68 in the Index, was georeferenced in detail by our team and juxtaposed to what was used by Nimuendajú (Figure 29).

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Figure 29 - Comparison of points referring to Gabriel Soares de Souza's account of the "Ethno-Historical Map" (in red) with the reading of the same work (marked by circles on the map) by the authors

Source: Own authorship.

The red dots are those identified by Nimuendajú, while the black circles result from our georeferencing. There is a significant amount of data pointed out by Nimuendajú that does not appear in our reading of Soares de Souza's work, especially in Northeastern Brazil. These points were reviewed, and the explanation is most likely due to the effect of "unwanted duplication", since Nimuendajú's system accumulated data from various authors for the same group, i.e., we do not have only Soares de Souza's information, but also that of other authors who mentioned the same peoples as him. Even in the case of under-representation on the part of the data obtained by our team, several sets are ignored by the ethnographer, evidencing an expressive selection by him for various areas, especially in the South, as well as in Ilhéus and Belém.

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Through cartographic techniques, it was possible to identify a wide repertoire of choices and selectivity in Nimuendajú's reading of colonial accounts. Like the cases discussed above, Krause's (1911) work was only used to identify Kayapós, even though it mentioned the position of many other groups. It was not possible to find a regularity, as this would require rereading and redoing the works from all the sources used by the author. However, we believe it is relevant to highlight these differences in the cases presented, as this is very salient in reading the "Ethno-historical Map." The expected exhaustiveness celebrated by Nimuendajú's commentators was not so great as they imagine, and he created notable absences.

Cartographic language and its biases

We can understand cartography as a language associated with the act of mapping the world and its complexity. For decades this technique has been analyzed from various perspectives, increasingly critical and based on anthropological and epistemological questions. Based on this spirit, we will analyze Nimuendajú's rhetoric and, consequently, our own dismantling work, understanding "dismantling" and "deconstruction" as different stages of our *détour*. So far we have shared Nimuendajú's empiricism to show his options. Now it remains for us to evaluate other aspects.

Cartography can have destructive effects on other knowledge and cultures by seeking to conceptualize, produce and disseminate maps privileging its mostly Eurocentric origin, rooted in Western spatial conceptions that silence other ways of knowing and apprehending space. This destructive power does not mean that this language is a privilege of the European peoples. However, it was "domesticated" by them and imposed as universal over the past centuries, within a process of scientificization, technicization and demand for accuracy. Cartographic practice and its exercise in the colonial period in the Americas - and we could extend it to the present day - was perpetuated through the disqualification and inferiorization of all the diverse possibilities and ways of mapping of the indigenous societies of the Americas, as well as in other continents and peoples marked by colonialism (HARLEY, 1989; 1992; RUNDSTROM, 1995).

In discussing the complicated task of making maps that respect native conceptions of space, we have the opportunity to discuss to what extent the use of cartographic resources promotes advances and possibilities in studies about indigenous peoples in various areas of knowledge. Two elements are fundamental: the possible incompatibility

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of the system for collecting and using geographic information between Western societies and the indigenous peoples of America; the use of techniques and technologies for understanding space, in intercultural contexts, serves as a new tool for assimilation and epistemological colonization of indigenous cultures by Western cartographic and spatial conceptions (RUNDSTROM, 1995).

Would it be possible to perceive these forms of cartographic domination when we talk about Curt Nimuendajú's map? To reflect on this, it will be necessary to dialogue with the anthropology of cartography. Since the 1980s, there has been a strong debate about the use of cartography by native groups. Theoretical and methodological discussions presented by some authors have been dealing with the dangers of GIS use. At the same time, other perspectives point to its "rehabilitation" as a useful and viable tool. Several initiatives by indigenous groups have already been using GIS intensively and often with political purpose, manifested in the mapping aimed at the defense of ancestral lands. This debate refers to the uses that native groups have made since the 1950s in Canada and since then also in the United States, within land claims (HERLIHY; KNAPP, 2003).

During the 1990s, such experiments slowly began to use computerized systems as well. Rundstrom is one of the biggest critics of the use of these tools by native groups. The criticism is based on the fact that the use of these Western technologies could completely destroy native epistemology and their original ways of understanding space. The technicism that marks these procedures (and which seems obvious to us) would act as a destructive and domineering element. According to him, such practices prove "[toxic] to indigenous peoples and their knowledge systems" (RUNDSTROM, 1995, p. 55). Despite the criticism, which has a strong essentialist tone, the author's analysis ignores the differences between native peoples by pointing to the existence of a general native epistemology, indicating its characteristics throughout the article, that is, disregarding the diversity in different spatialities of each group.

Despite these points echoing as an insurmountable barrier to the development of new research that intertwines conceptions of space, indigenous peoples, and the use of traditional to Western cartographic tools, we have found interesting alternatives for dealing with this problem. There is a great diversity of mapping methods and initiatives that focus on the direct participation of native groups in the construction of cartographic visualizations (MACKENZIE; SIABATO; REITSMA; CLARAMUNT, 2017), in addition to the existence of GIS laboratories run by indigenous groups in their territories (CHAPIN; LAMB; THRELKELD, 2005; HERLIHY; KNAPP, 2003).

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Realizing that the cartographic operation is tied to its Western-European tradition - loaded with principles and tools significant only to an ethnocentric spatial conception - does not preclude the development of works involving the cartographic craft and geographic analysis of indigenous groups. Most of these native cartography initiatives focus on solving current and necessary demands for their defense, on territorial claims and incorporating the traditional knowledge of these peoples in the act of mapping. The populations that participate in these initiatives are no longer "mere informants", but stand out as negotiating subjects and active in the cartographic construction process (CARDOSO, 2014, p. 24).

Even in terms of "analog" maps on paper, native groups throughout history have had various forms of cartography, both original and influenced by the colonizer, and this could exist in parallel with the maintenance of the most fundamental ethnic values. An exemplary case is the study by Chauca Tapia (2016) on Chinese and Amerindian cartography and their links with the Jesuits, in which he emphasizes, among other things, that the production of Samuel Fritz's map (which we talked about earlier) was made possible by collaborative action of various peoples along the priest's journey in the late seventeenth century. We also have the studies conducted by Barcelos (2010) on the action of Guaranis in the production of "Jesuit" maps, under the influence of priests in their final phase, but with native characteristics in all phases of elaboration. According to him, "many indigenous people actively participated in these processes. In some cases, they may have even been encouraged to initiate cartography" (BARCELOS, 2010, p. 2). The author also emphasizes the strategic use of cartography by indigenous people in the face of scenarios of uncertainty and struggle for land. As Perkins says: "In some contexts, mapping practices may be used to subvert [...], while in others, it is the polyphonic potential of the map that is teased apart, with the same image representing many different views and used for many different purposes" (PERKINS, 2003, p. 345).

In his latest publications, Harley was already beginning to highlight the need for the history of cartography to make two commitments in including native groups in the Americas as agents producing this form of knowledge: accepting the existence of indigenous cartographies that continued to be practiced before and after the arrival of European colonizers; the exercise of historical research focused on reconstructing indigenous contributions in the making of "European" maps." (HARLEY, 2002, p. 171). Such an engagement has been showing the significant Native presence in the writing of new research on cartography of the Americas,

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in which European colonizers are no longer seen as the only cartographers of this not-so-New World, already mapped by indigenous groups.

Dialogues between indigenous history and the history of cartography have revealed the importance of cartographic analysis in delving into colonial relations, in which maps were operated within the spectrum of imperial tools to native resilience. From the constitution of mixed cartographic practices in central Mexico, through the uncertain and partial geographic information about the North American West compiled by European empires, to the emergence of Enlightenment scientific expeditions in South America that promised true and accurate mapping of the New World, recent work emphasizes native centrality in constructing the possibilities of the act of mapping, previously classified only as European (GRUZINSKI, 1991; MUNDY, 1996; SAFIER, 2008; MAPP, 2011). Even with such advances, the historiography of maps and cartography still faces challenges such as the critical inclusion of native perspectives on the late centuries of colonial rule in the Americas, not to mention the absence of African or African American perceptions of spatial mapping.

The inclusion of indigenous peoples in cartography also instigates questions about their history of social and political impacts in the dispossession of native lands since the beginning of colonization. Harley points out how "maps provide a roadmap for studying territorial processes where indigenous people have been progressively pushed off their lands" (HARLEY, 2002, p. 170). Maps based on precepts of high precision can reinforce with their visual and symbolic rhetoric the erasure or marginalization of ethnic, racial, and social groups. Thus, Harley criticizes ideals of technical precision and technological advances in the cartographic field that are unwilling to reflect their ethical commitment. Thus, precision and technicality should come second, for we must first ethically consider the impact of cartography in resolving or exacerbating issues of social justice (HARLEY, 2002, p. 206-207). Taking this into account, we believe that the construction of digital cartographies that make use of GIS can and should be in dialogue with social justice issues resulting from the impact of historical processes in our society. Such an analysis can also be made on the Nimuendajú map, when we ask ourselves about its intentionality, its ethical commitment, and its impact on the construction of an indigenous territorial presence that is not limited to or based on the Brazilian territory or any nation-state, but where South American hydrography has great weight in its composition when explaining the availability of Amerindian nations on the continent.

The reflections of these authors help us think about some fundamental issues to understand Nimuendajú's work. The first problem is that a map is never the product

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of the cartographer who draws it, but of a long process of data collection (in the field), informant notes, logistics for the work, preparation of sketches, drawing, and decoration. In some cases, when the map is printed, there are other concerns regarding the graphic reproduction process and its limits, which also have their history.

Let's start with the "field" and the informants' notes. This is where we connect with the previous part. We have seen that Nimuendajú's map was produced by hundreds of "informants" (in addition to his own field observations), authors of works of a very diverse nature, produced under very different circumstances, even though Nimuendajú treated them all as if they were ethnographers. The most important informant, as we have seen, was Karl Friedrich Philip von Martius, with the work *"Beiträge zur Ethnographie und Sprachenkunde Amerikas zumal Brasiliens"*. Von Martius was an important German scientist, recognized mainly for his contributions to the field of botany. However, he also conducted extensive research on the languages and indigenous peoples of Brazil.

Von Martius received an invitation to join the Austrian-Bavarian scientific expedition that accompanied the arrival of Maria Leopoldina to Brazil, and between the years 1817 and 1820, in the company of zoologist Johann Baptist von Spix, he traveled much of the Brazilian territory. The direct result of this expedition, besides the cataloging and extracting specimens, was the publication of the work "Viagem pelo Brasil, 1817-1820" *(Journey Through Brazil),* which was also the basis for later works such as *"Beiträge zur Ethnographie und Sprachenkunde Amerikas zumal Brasiliens"*. In this, Von Martius uses the direct observations made by him and Spix during their expedition together with information from other travelers to make an ethnographic and linguistic analysis of the indigenous groups in the place (DIENER, 2014).

In his writings, we find, amid strong value judgments about non-assimilated natives, references to the indigenous presence in the crossing and in the information gathering process, something that is mitigated when we see the overall work. Martius' "descriptive" map, made by his narrative and "cartographed" by Nimuendajú, actually contained a great deal of "native" fieldwork. Often Martius and Spix were "neither informed about the path to take, nor about the navigable waters and other important circumstances, in such a long and risky voyage, entirely at the mercy of an Indian, our pilot" (SPIX; MARTIUS, 1981, p. 63). This excerpt from *Journey Through Brazil* precedes the travelers' entry into the Amazon River and clearly shows the active participation of indigenous people in the paths chosen for the expedition and consequently in the process of collecting information; and the importance of indigenous knowledge for Spix

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and Martius' trip to the Amazon region and for the subsequent products resulting from this expedition.

Although we can point out problems of ethno-geographic interpretation, Nimuendajú's product is also a map of the hundreds of groups that participated in the field collection, as happened with Fritz's, which was also used. However, when we think about Curt's "collection" of information, the most interesting element is that the result of the organization of all the data was a cartographic record with thousands of inscriptions on the map of South America over the years. The issue of time is important not only because Nimuendajú has historically located their locations, but because when we separate them chronologically by century, as we did earlier, we have the "negative" of those thousands of inscriptions on the map: large absences, represented by blank spaces, which were hidden by the different temporal layers with which the map was made. It is as if the data from later epochs were covering up the "voids" of the past, making a fundamental piece of information opaque: it was not an ethno-historical map, but one of sightings made by Europeans, as we pointed out earlier. It is a rhetoric based on absences, since this was not discussed in the textual parts preceding the map either.

This rhetoric of absences must be related to Nimuendajú's theoretical positions, and most likely this was very conscious. An advocate of preserving indigenous people in their communities, Nimuendajú hoped to preserve a native essence. This position was very justifiable in a context in which the alternative was their "civilization" and invisibility, as proposed by Hurley in the 1910s and 1920s, but it ended up preventing the recognition of indigenous identity in peoples who had had strong contact and miscegenation. His always strongly indigenist positions meant that his design was politically indigenist and that the occupied spaces of the continent were all associated with native groups. It was necessary to populate the continent with indigenous information, which has ample predominance in drawing. On Nimuendajú's map, seen from afar, it is easy to ignore the national state that would be established on the lands of the native peoples. Today's borders appear, and many large cities are indicated, but in a very discreet way, occupying an obvious background, almost to indicate their inconvenience on an indigenous continent. An additional element allows us to think about Nimuendajú's concerns with filling the empty spaces. In a 1935 letter to Carlos Estevão, Director of the National Museum, Nimuendajú wrote that "Snethlage also left me the necessary data for our ethnographic map from which one of the most sensitive white spots was eliminated." This was not just an empiricist concern. It was necessary to give space to the natives (WELPER, 2002, p. 94, footnote 108).

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Other elements worth discussing concern the way of visualization chosen by Nimuendajú. All groups were represented with the same cartographic legend: longitudinal banners for larger areas and points, represented by a section with the group's name and a date, for specific sightings. No room for different ways of relating to space, according to native knowledge. It may be a strong criticism, considering the context in which the work was produced, but in fact, what Nimuendajú did was to homogenize the native experiences with a modern cartographic code, arranging groups in space as if they were static, even in the face of sets for which seasonal movement was fundamental.

The question of the dynamics of movement is certainly a central element. It is correct that Nimuendajú inserted arrows in the middle of the groups to indicate their movement. However, they end up indicating more displacements resulting from the flight to the interior (caused by the arrival of Europeans) than the native dynamics. These were crystallized in the spots and banners used to represent them, determining territories for each tribe in a tendentially static way. As Ingold states, when we refer to cartographic work, we privilege the creation of a static representation of a given reality. Consequently, information regarding mobility and the dynamics of space occupation ends up being neglected in favor of a fixed illusion (INGOLD, 2007). This aspect, almost general in cartography, becomes a problem when dealing with the issue of movement, migration, and spatial occupation, which follow a different logic from the imposed traditional markers.

Conclusion

Throughout this text, we seek to present Curt Nimuendajú's "Ethno-historical Map" and the way in which this cartographic product was "dismantled" through the use of a GIS, that made us realize several marks of the production of the famous map. There is a great debate about the technicism present in these tools, and even Nimuendajú's map could be accused in this direction, since it did, analogically, the same thing that is done nowadays: cross data from various sources in different layers of information in a defined spatial context (in this case, the South American continent). In analyzing his work, we ended up doing something similar and can, without any doubt, receive the same criticism of technicality alien to the specificities of indigenous experience. However, these are multiple, and the challenge is to think about them in cartographic terms. The ethnographer knew this.

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By using geographic information systems to digitally reconstruct the "Ethno-historical Map", we ended up having the possibility to perceive some of the author's choices, among which we highlight a notorious selectivity in the representation of certain groups by "informants". This element was not explained, and it may be very difficult to find a justification for it. However, the most important point is not this one: it is what we call the "rhetoric of absences", when we reveal large empty spaces covered up by layers of data from later times. This rhetoric would be the result of transforming European descriptions about the natives into positivist information about the correct position of native groups in time, as we have tried to demonstrate throughout these pages.

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