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The Map, the Name and the Territory

Toponymic struggles in the era of cartographic post-sovereignty

Matthieu Noucher

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10.1. Place names, an issue of information sovereignty

In the official letter sent on February 5, 2018 to MP Valéria Faure-Muntian, French Prime Minister Édouard Philippe explains the motivations for the mission he has entrusted to her: “Spatial data remains more than ever a vector for informed action by the State and a sovereignty issue”. The expression “sovereign data” subsequently comes up six times in this three-page letter which details the expectations for this study on the governance of spatial data in France. This would lead, a few months later, to the submission of a report entitled “Sovereign spatial data” (Faure-Muntain 2018). This question is of concern to public authorities around the world today as the digital revolution profoundly reconfigures the strategic environment of states (Douzet 2020) and the way in which they attempt to control the “datasphere” (Bergé and Grumbach 2016). Mapping therefore appears particularly symptomatic of these new digital governance issues. In fact, the field has experienced a series of technical, legal and organizational reconfigurations over the past fifteen years that have overturned the way in which maps are produced, distributed and used. The digital turn and then the development of the Internet with the emergence of the geoweb – defined, at least, as the aggregate of spatial technologies and georeferenced information organized and transmitted via the Internet – have given rise to new actors, new practices and new tools. As a result, mapping is no longer the sole responsibility of States. Multinationals like Google as well as communities arising from digital commons like OpenStreetMap have become key players. I therefore argue that, despite the State's very voluntarist rhetoric seeking to rehabilitate a form of

cartographic authority, the recent evolution of the geographical information landscape leads to the emergence of a form of cartographic post-sovereignty.

Cartographic sovereignty can be defined as the exclusive privilege of states to provide their own representation of the national territory. This is reflected in the divergent technological choices of national cartography, even in the geodesic systems or the units used. The state thus constitutes itself as an essential source of cartographic authority through its ability to control the collection, representation and also the distribution of official maps. However, today's geoweb causes a shake-up of sovereign digital geographies by multiplying potential sources but also channels of distribution. Official maps are supplemented, circumvented or even competed with by alternative maps, and cartographic authority is called into question. The methods of production and circulation of place names are exemplary processes from this point of view. If official toponymy is a prerogative of local or national authorities, toponymies of use or even counter-toponymies emerge on the Internet to the point of completely blurring the maps, as I will explain in the first part.

To illustrate these issues, I propose to rely on the heuristic case of French Guiana. It presents, from the point of view of place names, a complex situation that is particularly interesting to analyse: settler place names from the time of the colonial conquest are juxtaposed with native place names. However, official maps are far from reflecting this diversity. They seem to be fixed in received ideas that have "stuck" to Guiana for centuries, while fostering them very widely (from *terra nullius* to green hell, from the El Dorado of the miners to the hostile jungle). Therefore, the geoweb appears as an alternative distribution channel where issues of knowledge and recognition of the different communities which make up French Guiana are expressed. By coming back to some historical and recent cartographic controversies, I will highlight the permanence of the political stakes of the naming of this territorial margin. I will then show how the geoweb can open up new perspectives of resistance.

Finally, I propose a research agenda. I then defend the thesis that in addition to critical analyses of the meaning of *place names* or *place naming*, it is now also necessary to deconstruct the power games associated with the regulation and control of the circulation of the various existing toponymic databases (*place name flow*).

10.2. Cartographic post-sovereignty and place names: when the geoweb blurs the map

10.2.1. Cartography and sovereignty: the double challenge of a critical approach

Modern cartography, understood as large-scale topographic cartography, was constructed at the beginning of the 19th century, in a close relationship with state power (Desbois 2015a). Colonial cartography is a good illustration of this link between the affirmation of modern states and the representation of space, between territorial domination and control of the content of maps. The actors of colonization, in fact, participated very widely in the laundering of maps by erasing certain markers so as to create from scratch an empty space, which then became a space to be conquered (Laboulais-Lesage 2004). The colonial map therefore gives shape to space by marking it with elements (roads, waterways, etc.) that will allow it to be tamed. At the same time, it expels indigenous practices and memories into the void of a blank space. Place names are at the heart of these selective practices. Thus, H el ene Blais, in *Mirages de cartes*, analyses, between bricolage and adjustment, the cartographic constructions at the origin of “the invention of colonial Algeria” (Blais 2004). Jordan Branch (2014), meanwhile, retraces the history of modern cartography in relation to the evolution of international relations. Drawing notably on the analysis of peace treaties, he exposes how the developments of maps and political sovereignty are crucially linked. Branch's thesis is twofold. On the one hand, he defends the idea that the representation of delimited and named spaces on the first modern maps preceded modern political practices based on these limits and on these names. On the other hand, it explains how the relationship between cartography and the development of modern territories shapes our understanding of international politics today. In *The Sovereign Map* (2005), Christian Jacob emphasizes this last point by examining the role of the *spectator* in decoding the meaning of a map and the role of society in defining the power of maps as authoritative representations of space.

On the strength of these observations, maps have for several decades been the subject of critical analyses that decipher from a political perspective their construction and their socio-spatial effects. These analyses are part of the current of critical cartography, a movement that questions the map as a neutral and objective representation of reality, to conceive of it as a social product essentially used for purposes of domination. By distancing himself from functionalist approaches and privileging their cognitive scope, the Englishman John Brian Harley, in his reference text *Deconstructing the Map* published in 1989, invites us to rethink maps as forms of socially constructed, subjective and ideological knowledge. A historicist current would then emerge, in the years 1980-1990, in particular around the study of the map as an instrument in the service of the

formation of the modern state. Other research has progressively nuanced the vision of a cartography summed up solely in the “repressive” exercise of power, in favour of a Foucauldian approach for which the map becomes part of a “knowledge-power”. More subtle forms of domination and control, circulating, internalized by individuals and no longer imposed by force, are then revealed. The role of cartography as one of the techniques of territorialization of power, but also as a vector of cultural and social mutation of the population, is then made clear. Once again, place naming, through its ability to construct and disseminate hegemonic visions by freezing certain denominations and masking others, is one of the key elements analysed by critical cartographers.

Faced with the development of digital geography, these critical approaches find a new resonance with the communities of researchers who work on geographic information systems (GIS), develop geomatics and gather in the United States under the name of *GIScience*. The emergence of a current of research around *Critical GIS* is then marked by the rise of questions about the social implications of these technologies. Towards the end of the 1990s, critical GIS became a sub-discipline of digital geography (Desbois 2015b). Researchers defend the possibility of a critical use of GIS, in particular embodied in a feminist geography (Kwan 2002) or by the introduction of *GIScience* techniques into actions of participatory democracy with the implementation of participatory GIS (Rambaldi 2005). The issues of cartographic sovereignty, at one time removed from scientific concerns and the media scene, reappeared at the turn of the 2010s, with the development of the geoweb and the politicization of “digital sovereignty”.

10.2.2. The questioning of state authority or the emergence of a double cartographic deregulation

The notion of “digital sovereignty” has been growing in interest since 2013 and the revelations of Edward Snowden about the mass surveillance conducted by the United States. In response to these revelations and faced with the unchallenged domination of the Sino-American duopoly over the digital world, many European states have called for guaranteeing Europe's technological sovereignty. The question of data, from their collection to the control of their dissemination, including their processing, has become a key strategic issue. Cross-border platforms, whose added value is based on their capacity for information intermediation¹, are becoming prominent on the international scene and are gradually becoming an additional challenge to the digital sovereignty of states. These large digital platforms indeed shape the informational content that circulates on the

¹ Intermediation platforms connect actors to allow them to exchange goods or services on two-sided markets, such as drivers and passengers in the case of Uber. Many platforms place informational content at the heart of the services offered.

Internet by selecting data, prioritizing results, directing flows, opening or closing the circulation of data (Grumbach 2020). The informational space and control of the data circulating on the Internet is therefore no longer under the sole control of states (Douzet and Desforges 2018).

Cartographic data perfectly illustrate these recent developments and the challenges of the informational governance of territories. The development of GIScience, the growing availability of spatial data (in particular satellite imagery), the growing involvement of digital multinationals and then the meteoric rise of cartography on the Internet have considerably transformed the links between state sovereignty and cartographic production. Also, despite the state's voluntarist rhetoric to rehabilitate a form of cartographic authority – as evidenced, in France, by the recent parliamentary report quoted in the introduction – the evolution of the landscape of geographical information has led over the last ten years to the emergence of a form of cartographic post-sovereignty. The sovereignty of states, which was exercised particularly through control of the data which their national mapping institutes disclosed about their territories, is being disrupted by digital platforms with a global reach, but whose content is based upon very reactive local networks. This development of spatial data, in all directions, may appear both as the symptom and as the agent of the crisis of nation-states confronted with globalization (Desbois 2015a). A double deregulation is thus observed: from above when the state is in competition with planetary platforms, from below when it is circumvented by local actors.

10.2.2.1. Cartographic deregulation from above: states facing the giants of the (geo)web

The convergence of GIS with information and communication technologies (Internet, mobile telephony) and geolocation systems (GPS) have led to the emergence of new methods of manufacturing and disseminating geographic information, which is reflected well in the notion of geoweb. The *geospatial web* or geoweb can be defined as the generalization of organization by the information space on the Internet. This development was rapid and unexpected because it did not come from institutional and technical players in the GIScience sector. Indeed, it is the massive investment of digital (Apple, Microsoft) and web (Amazon, Google, Facebook) multinationals in geospatial technologies that has led, since the mid-2000s, to a major reconfiguration of production and visualization of digital maps. The emergence of new cartographic interfaces, such as virtual globes, has met with an enthusiastic response both from the public and from the creators of Internet sites and mobile services. The ease of reuse of tools has led to the rapid dissemination of a few planetary platforms that have quickly become essential, such as Google Maps or Microsoft's Bing.

Beyond the new visualization interfaces, the Web giants have also invested in the production of spatial data by creating their own cartographic repositories. Deploying impressive collection infrastructures (from *Google Cars* surveying road networks while photographing landscapes, to satellite constellation projects), these multinationals do not simply manage the *pipes* through which information circulates; they also control the content circulating there. This control operates in two distinct ways: on the one hand, by producing their own geographic database, they supplant the cartographic reference systems of states by distributing planetary base maps. The "Google Maps style" thus leads to a homogenization of cartography which masks national graphic specificities (Lieselot *et al.* 2020). On the other hand, to supplement their own data, these platforms aggregate multiple sources. In doing so, they select and prioritize information. Once again, place naming appears as an exemplary case of these new methods of data control. Thus, as Jack Nicas notes in the *New York Times*², in San Francisco, a place branding operation led shopping centres to be renamed on Google Maps, without any consultation with local authorities, due to certain sectors of the city having a bad reputation. This virtual street naming quickly spread to the digital world (from hotel booking centres to dating sites, from the Uber delivery platform to real estate agencies) and then to the physical world with the appearance of advertising billboards. These surreptitious naming changes illustrate how Google has become the primary arbiter of place names. Decisions taken by a few cartographers from the Mountain View firm can reshape the identity of a city, a village or a district, without validation by the public authorities. This observation at the local level also applies at the national or international level. The names of countries and seas, like the drawing of borders, are regularly the subject of controversy. In defiance of international arbitration, Google in fact adapts the outline of borders and the names of countries/regions according to the location of the user consulting its maps.

This deregulation from above, which gives to a few rare players who dominate the geoweb an unprecedented ability to circumvent the cartography of states by imposing their own vision of the world, is coupled with a deregulation from below, less spectacular but just as effective.

10.2.2.2. Cartographic deregulation from below: the State faced with volunteered geographical information

Investment by digital giants has led to an unprecedented boom in geospatial technologies and has also contributed to a form of democratization of cartographic tools: GIS reserved for specialists now cohabits with online cartography, virtual globes and other geoportals whose handling is greatly facilitated (Joliveau *et al.* 2013). To translate the technical and organizational reorganizations which shook up the world of GIScience

² August 2, 2018 edition.

under the influence of Web 2.0, Michael Goodchild published, in 2007, a reference text in which he proposed the expression “volunteered geographical information”. This notion has gradually imposed itself as a unifying framework which reflects the central place now occupied by the citizen in these new modes of mapping.

Each Internet user can now consult, annotate or cross-reference their data by georeferencing them and mobilizing them on online cartographic interfaces. A profusion of ego-cartographies can thus be observed on the Internet with the dissemination of memorial and personal maps, or even with the visualization of digital traces (Noucher 2019). While solicited uses have appeared in the field of geomarketing, social networks, participatory sciences, crisis management or even citizen consultation, other more spontaneous practices have gradually emerged in the cultural, artistic or even political fields. Collaborative mapping projects like OpenStreetMap (OSM) now occupy an important place in the geographic information landscape. Often presented as the "Wikipedia of cartography", OSM is a project that offers thousands of contributors multiple collaborative environments to expand a single global cartographic database, freely editable and shared.

This ease of production and dissemination of spatial data on the web also contributes to strengthening the capacities of non-experts in mapping to reclaim the power to map their own territory. Previously exclusively *top-down*, and thus an attribute of power, the production of maps also is gradually becoming a *bottom-up* production. Multiple actors, traditionally excluded from the cartographic production process – neighbourhood residents, indigenous peoples, environmental movements, etc. – have thus appropriated the tools and modes of representation of cartography to put pressure on public policy. Though, as an extension of participatory mapping, participatory GIS have made it possible to introduce GIScience techniques into activities of participatory democracy since the 1990s, the rise of the web tends to amplify this type of initiative (Joliveau *et al.* 2013). From Cotonou to Benin (Choplin and Lozivit 2019) or Saint-Laurent du Maroni in French Guiana (Morrachini and Comptour 2020), there are many examples of participatory mapping that mobilizes OSM to render visible neighbourhoods (informal, marginal, spontaneous, etc.) that do not appear on "official" maps. Toponymic questions are therefore at the centre of these projects which, through collaboration with the inhabitants of these districts, make it possible to identify the denominations in use. These latter may then testify both to historical episodes or anecdotes, but also to the linguistic and cultural diversity of places (Quinn 2016). The toponymies of inhabitants inscribed on the map also make it possible to give visibility to subaltern communities who live in these cartographic no-man's-lands.

The distinction between deregulation from below and deregulation from above must be nuanced, as interweaving between different registers of production is sometimes

required. Thus, when Facebook announced the purchase, in June 2020, of Mapillary – a geolocated photo sharing system based on the Google Street View model – it further confused the issue by becoming the private owner of what, for many contributors, nevertheless constituted a digital commons. A mapping war including toponymic issues is therefore in process today, with configurations that may be multiple but retain one constant: public power is systematically excluded. The political stakes of place naming must be analysed in the light of this transition, muffled and brutal, towards cartographic post-sovereignty.

10.2.3. (Re-)thinking the political issues of place naming in the era of cartographic post-sovereignty

Since the geoweb has begun to blur the maps, how to understand place naming today? How to approach the naming of places when volunteered geographical information has transformed the figure of the cartographer into an elusive hydra? The long focus of critical cartography on the object of the “map” makes it difficult to understand these complex evolutions. The expansion of the uses of spatial representations well beyond the sphere of cartographers and other GIS specialists has not been accompanied by a renewal of this field of research; quite the contrary. The lack of involvement of geographers in tools for the “general public”, of the virtual globe type, whose “technical” operating logic escapes them, has generated a form of disinterest. Moreover, following Pierre Gautreau (2021), we can consider that critical cartography has paid excessive attention to globalizing histories of major cartographic projects. In many respects, this immoderate taste for the epic still infuses most of the work within this movement. In his work published in 2004, Jean Lefort thus presents the history of the concepts and mathematical tools of cartography as: "a human adventure, that of scholars and explorers, from their dreams to the adventures of their travels, from their vision of the world to the development of their instrument". Though these grand cartographic narratives have constructed the history of the discipline, they should not be a unique key to reading it today. This is why, in 2017, I proposed in a small book published by Éditions de la rue d'Ulm, the expression "small web maps" (Noucher 2017). It reflects two main perspectives of evolution: historical and political. From a historical point of view, the idea of small maps makes it possible to mark the break between grand cartographic narratives, which have always guided the discipline, and the recent emergence on the Internet of diffuse and exponential practices. Moreover, the politicization of what is “small” also leads to considering “small web maps” as minor maps, which is to say, produced outside the dominant institutional or commercial spheres. They then potentially give voice to various minorities and may even become counter-maps. According to methods common to Subaltern Studies, it is then a question of opening the study of maps onto corpora that are currently ignored, and of

analysing the way in which these data circulate, in which they are appropriated or made invisible, in which control over their transmission reveals (new?) power games.

It is in line with this proposal that I suggest addressing the toponymic databases that permeate the geoweb and gradually penetrate the physical world. To better account for the political stakes of place naming in the era of cartographic post-sovereignty, I defend the idea that it is necessary to complete critical analyses on the meaning of *place names* or on *place naming* by studies making it possible to account for the fine mechanics of their circulation (*place name flow*). Far from being anecdotal, I hypothesize that the multiple socio-technical mediations operated by institutional, commercial or community platforms that regulate, control, block or impose place name flow deserve to be analysed. They potentially reveal choices that are more political than technical, as evidenced by the permanence of the issues raised by the study of place names in Guiana.

10.3. Toponymic struggles of yesterday and today: the exemplary case of Guiana

10.3.1. Place names in French Guiana, a legacy of myths and conflicts

As with cartography, place naming constitutes a “colonial technology” (Walker *et al.* 2013, p. 7) which has been at the heart of the conquest of the interior of Guiana since France set foot there in 1643 and then, definitively, in 1664. From the island of Cayenne, the French colonists progressed little by little along the coasts. The French colony therefore appears, at first, as essentially coastal. The forest represents a natural barrier, an implicit limit both on the ground and on the maps. The cartography of this space is nevertheless not empty: the blanks on 17th century maps are thus filled by many imaginary figures³ and by place names. Lacking precise locations, the toponymic filling-in of the map thus makes it possible to occupy the space, to mark a possession or to erase any previous presence. A number of maps⁴ reveal, in this interior of Guiana left to the free interpretation of cartographers, archetypal visions of the colonial space (Regourd 2004). The case of the legendary Tumuc-Humac Mountains and the Franco-Brazilian

³ We might think here of the lions, headless humanoids and Amazons that border the imaginary Lac Parimé on the 1598 map of the Flemish engraver, cartographer (and artist!) Jodocus Hondius. The precision, for the time, of the description (geometrical and toponymic) of the coasts contrasts with the blanks of the map of the interior, which are then filled in by these legendary figures.

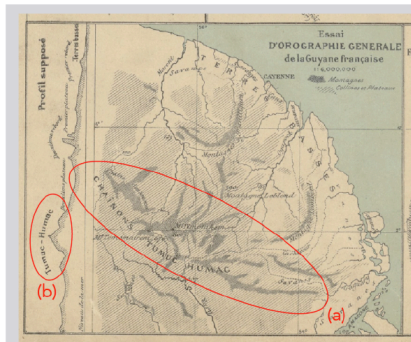
⁴ We might cite here, without seeking to be exhaustive, the printed map of Guiana by Du Val (1654), the map of Guiana by Lefebvre de la Barre (1665) or the printed map of Guiana by Bellin (1763), copies of which can be found in the National Library of France.

disputed boundary offer two exemplary situations of the use of place names as vectors for the staging – in text and images – of colonization.

10.3.1.1. The myth of the Tumuc-Humac Mountains or when place names are used to "close" space

Appeared from the beginning of the 19th century on Spanish maps, the Tumuc-Humac Mountains owe their popularity, in France, to the explorations of the military doctor Jules Crevaux (1847-1882) for whom they constitute an inaccessible ideal, symbol of his trip to Guiana; then, to the stories of the geographer Henri Coudreau, who would go so far as to claim to have crossed the "high passes of the Tumuc-Humac" and draw up a map of them in 1887 (figure 1). The geographer Jean-Marcel Hurault, son of the founder of the National Geographic Institute (IGN), would be the first to affirm that this map constituted a fake, drawn up without respecting distances and altitudes on routes that Coudreau had not actually travelled. From the 1950s, aerial photographs revealed the non-existence of a real mountain range. However, this place name, very practical from a geopolitical point of view for marking a *natural* border with Brazil, would appear on IGN maps until the end of the 1960s!

This type of cartographic myth, maintained by the public authorities, is not anecdotal in a region like the Guianas Shield which, even today, is the scene of numerous land and sea border conflicts (de Vilhena Silva 2017). These conflicts are often settled with maps and counter-maps whose place names then constitute key elements of the arguments of the various stakeholders.



1887: Extract from "Map of Guiana. Exploration of the Tumuc-Humac, tributaries of the Maroni and the Oyapock, etc."

Published in the mission report for the Ministry of Public Instruction by Henri Coudreau.

This inset dedicated to orography allows us to note the precision of the outline of the links in the Tumuc-Humac chain, which appear as much on map (a) as on the North-South "presumed outline" (b).

Source: BNF – <http://gallica.bnf.fr/ark:/12148/btv1b53027786w>

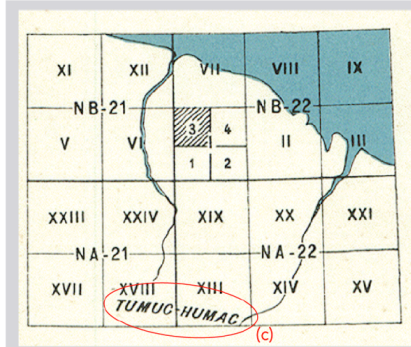


1895: Engraving of the Tumuc-Humacs from Mount Ariqnamaye

Published by Hachette in the account of Henri Coudreau's voyage, this engraving was accompanied by the following commentary:

"Before me is a mountainous massif 300 kilometres long and 100 wide, as large as Belgium. In the three hundred years that we have possessed Guiana, we voyagers have not yet been able to report anything positive about this mysterious Tumuc-Humac chain. This massif must be discovered in its whole, studied in its details. To guide me, no written document, no barely accurate indigenous information, nothing." (p. 92)

Source: BNF – <http://catalogue.bnf.fr/ark:/12148/cb34139685r>



1950: extract from IGN's photogrammetric sketch

Created based on aerial photography by the US Air Force (1945), the IGN published a photogrammetric sketch at 1/100,000 scale in colour in 1950.

Tumuc-Humac is the only place name (c) used in the index opposite. It marks the southern frontier of Guiana. While the region is delimited by the Atlantic Ocean in the north and the Maroni (in the west) and Oyapock (in the east) rivers, the place name (c) that links their two sources seems to "close" the territory by "naturally" marking the southern frontier.

Source: Document library <http://regards.cnrs.fr>

Figure 10-1. Appearance and persistence of the place name Tumuc-Humac

10.3.1.2. The Franco-Brazilian disputed zone, or when place names are at the heart of a border conflict

The delimitation of the border between France and Brazil gave rise to a veritable "battle of maps" where place names played a key role. Throughout the 19th century, the

French and the Brazilians claimed sovereignty over a vast expanse of 200,000 km² of savannas and forests located between the rivers Oyapock, considered to be the border limit by Brazil, and Araguari, considered to be the border limit by France. Taking advantage of the official absence of political authority, many adventurers then settled there, as well as runaway Brazilian slaves; subsequently, from 1894, wildcat gold miners who came from the Guianas and the West Indies following the discovery of a significant gold deposit in the region (Granger 2011). In 1895, a clash in the disputed zone between a French military detachment and a Brazilian militia caused about forty deaths, mostly civilians, in the small town of Mapá (Rouard de Card 1897). Faced with this international scandal, France accepted the Brazilian proposal for Swiss arbitration to settle this border dispute definitively. In Bern, a French delegation that was little aware of the problem but passed on the maps and arguments drawn up by the geographer Vidal de La Blache, faced off against Brazilians led by the diplomat Rio Branco, armed with an impressive corpus of historical maps (Granger 2011). Rio Branco used place names as proof not only of the location of the disputed river, but also of the antiquity and prior history of the Brazilian settlement, whereas Vidal de La Blache, with a more traditional use of maps, stuck to geomorphological arguments alone (Mercier 2009). The toponymic argument prevailed, and, in December 1900, the Swiss President awarded Brazil almost all of the disputed territory. The Treaty of Bern thus marked the triumph of Rio Branco's conception of geography, integrating place names as political and historical elements, over the more classic conception of Vidal de La Blache, who wanted to stick strictly to natural arguments. If few traces of this “Swiss sentence” are perceptible on the French side, in Brazil, Baron de Rio Branco is celebrated as illustrated by the street naming of Oiapoque, the border town where a commemorative monument also proudly sits (figure 2).

The examples of the mythical Tumuc-Humac Mountains or the role of denominations in the arbitration of the Franco-Brazilian disputed zone are not anecdotal: they testify to the evocative power of place names, over historical episodes which have shaped, and continue to forge imaginaries associated with Guiana. These imaginations today continue to feed into received ideas about a supposedly unstable region and will play an active role in the direction of its toponymic renewal.



Figure 10-2. Tributes to Baron de Rio Branco at Oiapoque, Brazil

[photo credits: M. Noucher, November 2019].

Top: monument to the glory of Baron de Rio Branco and the Treaty of Utrecht in the streets of Oiapoque opposite the headquarters of the federal police. The shape of the sculpture in the upper part of the monument mimics the outline of the borders and under the medallion of Rio Branco, one can read in French and Portuguese the words of the Treaty of Utrecht of 1900.

Bottom: street sign of the Avenue of Baron de Rio Branco in the streets of Oiapoque.

10.3.2. Toponymic renewal: the State grappling with its received ideas.

Although cartographic myths and border conflicts still have a major impact on the toponymic landscape of French Guiana today, it is not completely fixed. Changes are thus regularly suggested to the IGN, which produces based maps in France, and to the National Commission for Place Names, which oversees the conservation but also the coherent development of the country's toponymic heritage. Holder of the prerogative of official names on the territory, the state therefore plays, through these bodies, a key role in attempts at toponymic renewal. This semi-regal competence operates remotely from Paris, in a territory, Guiana, still marked today by a number of received ideas.

10.3.2.1. Inner Guiana by its official place names: between terra nullius and green hell

In a book published in 2016, the geographer Roger Brunet proposed a dictionary of French place names. Over more than 700 pages, it describes in detail the names of places in mainland France and overseas. Only one small page is devoted to French Guiana and the interior is quickly swept away with this sentence, without appeal: "Vast territories are populated neither by inhabitants nor by place names, at least on detailed maps." Brunet takes the wise precaution of specifying that his observation is valid "at least on detailed maps" because, as he explains in the preamble to his book, his method for collecting place names consisted of exploring the IGN Geoportal, the cartographic platform of the French State. However, by browsing the topographic map (1/25,000) of French Guiana on the Geoportal, the toponymic identification exercise must have been relatively quick...

Presented as the "French-style Google Maps" in a column signed in 2009 in *Les Échos*, by the director general of the IGN at the time, the Geoportal aimed to demonstrate that "the domination of the GAFA companies over geolocated information is not inevitable" and to defend "national sovereignty" through a public service of spatial data produced and hosted in France. Defending his institute vigorously, he emphasizes: "The State must have reliable data, supplied independently, to enable it to make decisions in a sovereign manner." It is in particular the high frequency of updates and the general and homogeneous coverage of the whole of the territory which should make it possible to distinguish the cartographic reference systems of the public service from private offers which, one senses, are only interested in regions with strong commercial potential. But, in browsing the topographic map of French Guiana, one can question the application of such a principle beyond mainland France, in that outside the coast, Guiana is dominated by blank space (figure 3).

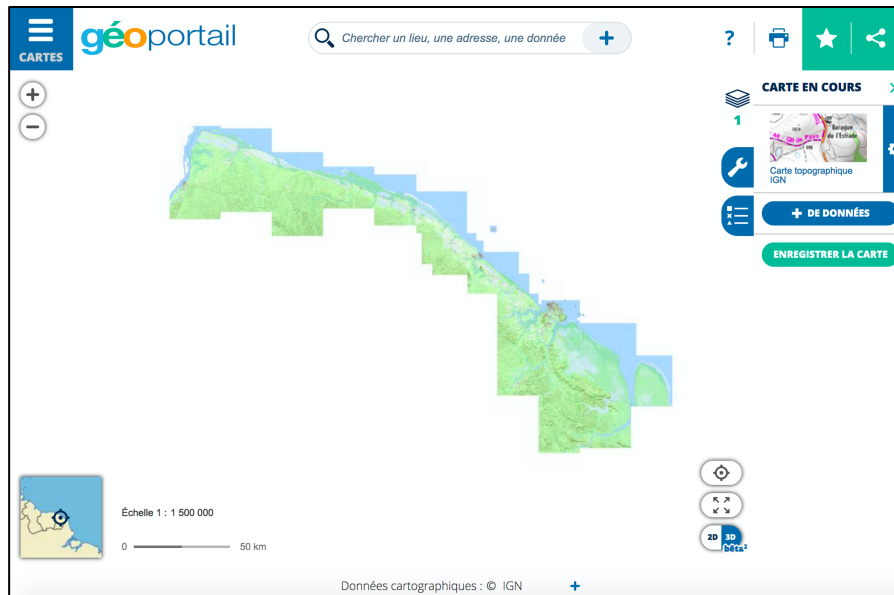


Figure 10-3. *Blank on the map*⁵
 [source : <https://www.geoportail.gouv.fr/> (Accessed August 2020)]

To explore inland French Guiana, Roger Brunet therefore had to change the scale of analysis and settle for the 1:500,000 map produced by IGN in 1995. As Lézy (2000) pointed out, the low diversity and poverty of place names on this map seems to freeze Guiana at the time of the conquest and the pioneers of wildcat gold mining. Place names are focused on gold sectors with *placer*⁶ appellations with evocative names such as: “Failure”, “Good Hope”, “Patience”, “Certitude”, “Misery”, “Madness”, etc. These denominations feed, in the minds of Europeans, the idea of a green hell. These symbols also continue to shape the perspective of a *terra nullius* and testify to the inability of these settler experiences to decode indigenous markers. However, if we look at the names used

⁵ The display on the national geoportal of IGN topographic maps gives a unique image of the territory: with no neighbours and no connection with the ocean to the north or the forest to the south, French Guiana boils down to a coastal strip whose strange division extends to the west along the Maroni to Saint-Laurent, while to the east it even ignores the Oyapock, its border river. If this island-map is only a reflection of the weakness of the coverage of national topographical references, one may wonder if this autarkic vision does not contribute to fuelling the idea of an internal no man's land.

⁶ A *placer* is a mineral deposit.

by the inhabitants, the current toponymic landscape of Guiana is characterized by its richness and diversity resulting from influences that are indigenous, Brazilian, Surinamese, Creole, Bushinengue, Hmong. The recent renewal of based maps, however, is far from reflecting this diversity.

10.3.2.2. *When the military generate place names... without knowing*

In 2009, IGN with the support of the Ministry of Defence launched production, over the 84,000 km² of the territory, of a campaign of aerial photographs and a new cartographic database from which a series of maps at 1:50,000 was derived. At the end of 2011, the entire series was produced. This short production time is a point of pride for the Institute which recognizes, all the same, in its internal newsletter: "It is a relatively 'expedited' cartography that uses a maximum of automatisms and a minimum of interactive repetitions" (Loil 2011, P. 11). This expeditious nature is noticeable when travelling through the topography represented on the map: it is thus not uncommon to observe watercourses doing "roller coasters" and going up certain slopes (Noucher, 2020a)!

The place names are also very approximate. Military sources have been preferred. Certain denominations, used by the Armed Forces to identify illegal wildcat gold mining sites, such as "Guerrilla", come from listening to radio from *garimpeiros*⁷: clandestine gold miners thus become the sources of official place names, despite themselves! In addition, a good proportion of the place names appears to be totally fanciful. For example, around Saül, there are sites that correspond to points geolocated by the French Guiana Armed Forces (FAG) and indexed as Saül_1, Saül_2, etc. (figure 4). In fact, the FAG provided IGN with their entire database, including a series of geolocated points. These include in particular sites for landing a helicopter. IGN has integrated all of this data *en masse*. Today, the military are the first to be surprised to see these sites appear on the map and to note that the indexes they quickly filled in have become place names⁸. The National Commission for Place Names admits the error, but considers that denominations coming from a regalian ministry are generally considered as fully legitimate⁹, which is probably why they were not questioned – incorrectly.

⁷ Refers to clandestine gold panners in the Brazilian Amazon and on the Guiana Shield.

⁸ Interview with the J2 Intelligence Bureau of the French Guiana Armed Forces High Command (COMSUP), Cayenne, May 18, 2018.

⁹ Interview with Pierre Jaillard, President of the National Commission for Place Names, Paris, February 21, 2018.

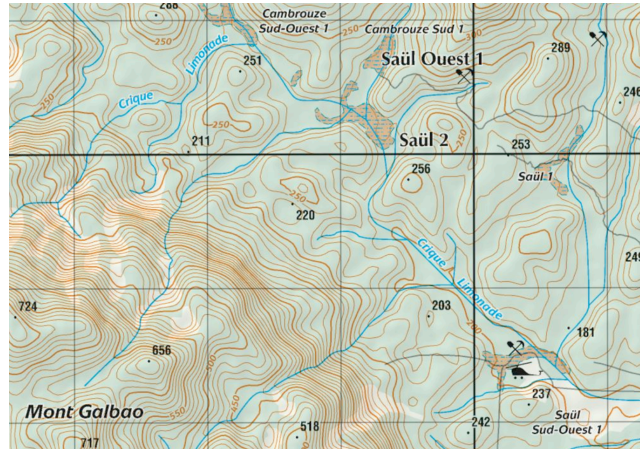


Figure 10-4. Topographic map of the surroundings of Saül, French Guiana¹⁰
 [source: <https://www.geoportail.gouv.fr/> (Consulted in April 2020)]

10.3.3. Soliciting and then circumventing the state to make indigenous place names visible

Contrary to popular belief widely promoted by the aforementioned IGN maps, the Guianese forest is not a virgin territory with a few rivers named by rare explorers of past centuries and a few placers identified by wildcat gold miners on the borders. As evidenced by the abundant archaeological remains throughout the Amazon and the Guiana Shield, the Amazon rainforest began to be explored at least 13,000 years ago and is therefore far from pristine (Rostain 2013). The Interior is still today the place of life for indigenous peoples and Black Maroon peoples, settled in villages along the rivers and around areas where shifting cultivation is practised using slash-and-burn techniques, as well as fishing and hunting. The way of life of communities in southern Guiana is based on a *resource territory* that caters to the needs of these forest communities in many ways. Consequently, each cove, each plot of land specific to the culture, each inselberg has its own character, a history and a place name which carries part of this memory and of these contemporary practices. In Guiana, the memory of indigenous communities is inscribed in the histories of the territory, and even more so in place names. Place names organize space and socialize it.

¹⁰ Near Limonade creek, “indexed” place names Saül_1, Saül_2, Saül West_1, Saül South-West_1 from the database of the Armed Forces of French Guiana, deemed legitimate for publication on the national geoportal of the IGN. Scale: 1 km grid.

It is to preserve this living cultural heritage and to facilitate the recognition of the appropriation of this territory by indigenous communities that the Amazonian Park of Guyana (PAG) launched a vast participatory mapping project which was completed in 2014, for the Teko and Wayãpi communities on the southern border of Guyana. By capitalizing on various surveys carried out over half a century and by performing, from 2009 to 2011, systematic GPS surveys, the PAG in partnership with the CNRS was able to draw up maps of the municipality of Camopi comprising nearly 600 different place names transcribed in the Wayãpi and Teko languages. The Wayãpi and the Teko are two indigenous peoples from the large Tupi-Guarani family, widespread in Brazil. Their long and intimate knowledge of waterfalls, passes, hunting paths, gathering and fishing areas, former villages... is expressed in the very large number of placenames whose territory is enmeshed (Grenand *et al.* 2017).

To have this approach and this indigenous knowledge recognized, the PAG, at the request of the indigenous communities of Camopi, structured and standardized a toponymic database which it then undertook to distribute via official channels. It thus integrated this database into the GeoGuyane site¹¹, a public platform administered by the services of the French State. As such, it represents the Guianese side of the European spatial data infrastructure implemented since 2007 in the framework of the INSPIRE directive. The latter aims to promote the reuse of institutional data by encouraging their dissemination and promoting access to them by defining technical specifications. In France, the National Geocatalogue¹² provides the intermediary between the European portal and the regional infrastructures which are themselves fed by local infrastructures. This interlocking of platforms, making it possible to trace data from the local level to the European level, must operate based on *harvesting* techniques, which *reap* the data as soon as they are disseminated on standardized infrastructures. Integrating its toponymic database into GéoGuyane was therefore for the PAG the symbol of official recognition of indigenous place names, by ensuring its distribution on national and European portals and, at the same time, multiplying the possibilities of reusing this data. But in practice, the operation turned out to be much more perilous...

10.3.1. Refusal to integrate indigenous place names: a question of sovereignty

Six months after the transmission of the data, the Amazonian Park's request received a negative opinion from the official authorities. This refusal of integration was motivated by a double reason. In its letters addressed to the PAG, the IGN explains that 350 place names are in "legitimacy conflicts": these are places already named by another source and which require two different sources to be integrated. The Amazonian Park points to

¹¹ <https://www.geoguyane.fr/>

¹² <http://www.geocatalogue.fr/>

the dozens of people, scientists and inhabitants who have contributed to this participatory mapping. But for IGN it is the same instance, the same group of inhabitants and therefore the same *source*. We see here the weight of the past and the difficulty of questioning the names given by the explorer colonists, or by certain soldiers unwittingly. The National Commission for Place Names also considers that uniqueness of sources does not pose a problem, in the case of the base transmitted by the military, because it comes from a sovereign Ministry, as opposed to the database from the Guiana Amazonian Park. In addition, 324 place names are in “technical conflicts”: characters specific to indigenous languages are indicated here which do not respect international standards. This last argument refers to a phoneme common to Teko and Wayãpi which does not find a graphic translation in French. It is a vowel between "i" and "u" denoted by convention by a "crossed i with tilde" or "ĩ". The tilde is a diacritical mark; it accompanies a letter to modify its pronunciation, in this case to nasalize the vowel. IGN considers that this notation does not comply with the standards in force. The PAG contacted the UNICODE international standardization consortium, which sets the computer standard allowing exchanges of texts in different languages, and demonstrated with the help of this consortium that the “crossed i with tilde” could be used in all computer systems that comply with the international standard...

This technical argument over, discussions with those responsible for place names in Paris then revealed other considerations, less technical and more political. Seen from Paris, it is difficult to conceive that there could be so many indigenous place names, it is difficult to imagine a greater toponymic density in Camopi than in Cayenne and, above all, the place names of the border municipalities raise a strong issue of sovereignty: “The fact of naming a place may be used one day to establish a territorial claim. There is therefore a real issue of sovereignty around place names, in particular in these border areas¹³”.

10.3.3.2. Bypassing the state: the geoweb as a weapon of resistance

Faced with this institutional blockage, the geoweb, through the many online mapping platforms that develop there, could be considered as a bypass for the dissemination of toponymic registers with high heritage value but not officially recognized. OpenStreetMap quickly emerged as a credible alternative. From a technical point of view, the integration of the "crossed i with tilde" does not pose a problem, and the OSM data model makes it possible to manage multilingualism from the outset.

¹³ Interview with Pierre Jaillard, President of the National Commission for Place Names, Paris, February 21, 2018.

In addition to these technical considerations, the growing institutionalization of OSM now makes it possible to make it a tool for disseminating and recognizing work that is already accomplished. The ease of access to data, the flows of which are freely open and interoperable, considerably broadens the potential for dissemination. Whereas, until now, maps were considered authoritative because of their official character, they now acquire a new form of authority thanks to the ease of access and reuse of their geographical data. From this point of view, OSM seems to be a serious competitor for IGN, even among the French ministries. Indeed, although not accepted into the national database, indigenous place names have gradually been incorporated into maps produced by private organizations, NGOs and local government authorities. Among the most striking examples, we may cite hydrological maps produced by a department of the Prefecture, and health care access maps distributed by the Regional Health Agency (ARS). Faced with multiple delays and blockages on the official path, the Teko and Wayãpi communities of Guiana are charting a parallel path which they control, and which is gradually spreading, betting on the fact that it will eventually prevail (Noucher 2020b).

10.4. Research agenda: when the geoweb brings place names into the era of post-sovereignty

10.4.1. Questioning the paradoxical promises of the geoweb

The analysis of the control of place names in French Guiana, through the deconstruction of the cartographic myths of the past and the IGN maps of today, makes it possible to question the way in which the French state seems to extend the colonial legacy and to highlight the power games around the control of territorial denominations. Putting it into historical perspective also makes it possible to insist on the important weight of imaginaries in the (non-)renewal of Guianese place names. This study finally reveals that, if the inscription of local place names on the maps published by the allochthonous power may become a potentially effective method of reclaiming indigenous identity, in French Guiana, this inscription comes up against issues of informational sovereignty. However, in the face of socio-technological changes, and the emergence of players with global dimensions — from multinationals like Google to communities supporting digital commons like OpenStreetMap — cartographic deregulation is accelerating. Counter-toponyms are spreading on the web and the authority of institutional data is gradually being challenged. The geoweb then bears a paradoxical promise: it offers access to a diversity of representations of space while highlighting, through various devices for controlling and prioritizing information flows, the most formally uniform content.

Thus, in the age of the Internet, it now seems necessary to deconstruct the games of regulation and circulation of the various toponymic databases, beyond official maps alone. The way in which these databases are disseminated, appropriated and reappropriated by different spheres of actors conditions their effective use and ultimately their authority. Confronted with the geoweb, the institutions, mainly national ones, which had until then designed, produced and supplied the cartographic and toponymic figures of reference are challenged and competed with by actors with very diverse statuses and motivations, basing their legitimacy on the proximity allowed by the dissemination of digital technologies. The visibility or invisibility of different choices of place name requires a deciphering of the games of authority which subsequently take place (also) on the Internet. Without replacing *place naming studies* but on the contrary, by seeking to extend them, I invite, through this contribution, research on political toponymy to multiply empirical studies and critical analyses of the processes of (de-)regulation of digital data flows. By positioning itself downstream from the creation of place names, this involves an engagement with real *place name flow studies*.

10.4.2. Deconstructing data streams

Inscribed in the ideology of “informational liberalism” (Loveluck 2015), data flows have become an essential figure in contemporary modes of information management. They are accompanied by notions of decentralization, network or even fluidity which come to oppose the centralizing rigidity of social and political entities, first and foremost the state. Informational liberalism is a reformulation of liberal political theory based on the widespread circulation of digital content within now-interconnected computer networks. Information must be free and systems standardized so that these flows of information solve multiple problems and allow innovative services to emerge. The whole concept is therefore based on a common utopia, a “technological sublime” (Nye 1994) where the circulation of information is promoted as a vector of democracy and prosperity. These techno-scientific promises deserve to be questioned, as highlighted by our case study on Guiana.

Technically, it is at the same time the efforts to standardize information systems, the lowering of communication costs and the improvement in the performance of communication infrastructures that have enabled the development of new computerized tools aimed at facilitating the aggregation, the fusion, the intersection, the hybridization of sources of diverse origins. While the production of toponymic databases has long functioned “in silos” with the multiplication, in the 1990s, of sectoral geographic information systems (one GIS per territory and per theme), the interoperability which accompanies the development of the web today accelerates the networking of information. The simultaneous assembly of many data infrastructures and their

interconnection at a planetary scale allow the rapid constitution of a growing mass of information which, although dispersed over different servers, can easily be gathered by a user and processed simultaneously. Information System experts talk about *orchestration* to discuss the control operations of these data flows. These are sometimes thought of as obvious, as automation makes them invisible. However, it is precisely these logics of orchestration that critical toponymy should grasp today. For geographical data to be recognized by these systems, for them to circulate and be able to ultimately appear on a map, they must meet increasingly stringent standards. However, nothing is neutral in the choices of standardization of data flows: they are guided by principles, objectives, rules, in short, intentionalities that are to be deciphered. The management of the circulation of geographical data appears as a new form of control which operates a homogenization and a filtering of representations, gradually becoming a tool for the dissemination of unequivocal representations of the territory, where alternative representations to those of the state or the giants of the Web struggle to make their way. Henri Desbois underlines this paradox: "it is surprising to note that in our time when GIScience and the geoweb have led to an inflation of cartographic production probably comparable in its magnitude to what Europe knew during the distribution of the first printed atlases (Woodward 2007), we often all look at the same maps" (Desbois 2018, p. 321). Thus, collective visions are constructed and formatted which deserve to be discussed. Specific geographical methods must then be invented to contribute to the understanding of these decentralization processes, which in no way erase the effects of domination creating or reinforcing hegemonic positions, of which Google is undoubtedly the most emblematic example.

10.4.3. Opening algorithmic black boxes

The challenge is therefore daunting, because exploring the socio-technical thickness of the infrastructures controlling these data flows is to confront real algorithmic black boxes. Concerns around the opacity of algorithms are widely shared in the scientific community (O'Neil 2016). They lead to the development of algorithmic studies with very varied approaches, as evidenced by the dynamism of the journal *Big Data & Society* in which multidisciplinary content (computing, information and communication sciences, law, sociology, geography, etc.) abounds. Each of the disciplines that mobilize around the subject tends to extend and renew its theoretical and methodological anchor points in contact with the digital devices studied. In geography, critical cartography has been deciphering, for several decades, from a cultural and political point of view, the construction of maps and their socio-spatial effects. My proposal is resolutely in line with the foundations of this current and its extensions around critical GIS (Schuurman 2000). But it also seeks to go beyond this anchoring: taking an interest in algorithmic black boxes in a context of post-cartographic sovereignty requires, in fact, considering new strategies. As Dodge and Perkins (2015) point out, it is undoubtedly much more complex to

deconstruct current cartographic devices where spheres of various actors intertwine, where multiple technologies are aggregated and where data flows intersect. from various sources, than the devices of yesteryear where cartographic power was held by a few rare experts. While Harley's studies centre on deciphering the authority of maps and their overarching and dominating nature, today questions of data circulation are central. To gradually supplement the textual reading of the product by focusing more on the data networking process, new approaches may be imagined and developed. Stimulating research perspectives then open up to avoid abstract propositions and engage in embodied approaches. It seems essential to combine critical cartography with, on the one hand, the sciences of geographic information, to be in contact with the designers of the systems studied; and with, on the other hand, Science & Technology Studies (STS), to understand both the way in which practices are constrained, but also the way in which uses adapt. Such a disciplinary alliance would make it possible, in the words of Rob Kitchin, "to unpack the entire socio-technical assembly of algorithms"¹⁴ (Kitchin 2017, p. 25), without overestimating the relevance of technology alone.

Despite their gradual removal from the cartographic *stage*, flows of geographic data act, *backstage*, as vectors for filtering representations judged suitable or not for circulation. Also, in the same way as *place names studies* question the processes of creation of place names from a political perspective, this contribution was intended as a plea for the development of empirical interdisciplinary studies that make visible the issues of the circulation of place names, that currently contribute in a meaningful way to their imposition or omission.

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¹⁴ Author's translation.

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