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TOPONYMS AND CARTOGRAPHY: HISTORICAL PERSPECTIVE AND LINGUISTIC CHALLENGES

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The two authors of this paper (a linguist and a historian) work together in a research team on synchronic toponymy (Lidile EA 3874) : the aim of this common work is the elaboration of a multilingual database (Dinopro) and of a systematic linguistic description of toponyms in the eleven languages covered by the team. The results of our research (see Löfström & Schnabel-Le Corre (in press) or Löfström & Schnabel-Le Corre 2005) made us consider the insertion of linguistic data on a cartographic medium, and therefore examine the implications of the insertion of toponyms in maps. The results of our analysis inspired this paper, where we thus will be treating toponym localization, naming processes and inscription principles with a historical perspective and on the basis of linguistic criteria.

Our contribution can be looked upon as the point of view of an enlightened map reader. By means of applying two scientific approaches to some examples of toponyms on maps, we wish to highlight a number of implications that are normally forgotten by users and sometimes not explicitly stated by producers. Thanks to these observations, we will be able to show cases in which cartographic conventions and techniques can collide with the formal and semantic complexities carried by toponyms.

Linguistic specificities appear more clearly in a contrastive perspective: we will therefore adopt a multilingual approach in our discussion concerning the constraints for toponym selection. We will otherwise proceed by keeping in mind the particular role of toponyms in cartographic representations, omnipresent although always complementary - you can hardly imagine a map intended only to represent the toponyms of a given territory, except from certain pedagogical applications -: the toponyms selected for a given map always depend on the overall aims of this map, as well as on its scale. Toponyms, although essential in a map, are hardly ever the main object and purpose of a cartographic document.

We will first discuss the implications of toponym insertion in maps through a series of historical examples and then proceed to the linguistic analysis of toponym structure and of its role for the inscription on a cartographic medium.

Toponyms and maps: historical notes

Historians of cartography normally study the conventions which shape the production of maps, their task being not only the analysis of the finished document, but also of the process that made this document exist, circulate and survive. The techniques available, the social expectations, the particular object of the document, the shared practices, the aim of the activity are all part of this process and therefore the object of the historian.When toponyms are inserted in cartography they are inserted in a knot of techniques, scientific practices and social conventions which are subject to change. The question for the historian is how toponyms interact with this changing basis? What are the issues of the interaction? We isolate three interdependent issues of the insertion of toponyms in maps: to locate, to produce, to name.

To locate. The process of location of the toponym depends on two preliminary choices: a decision has to be taken about the toponyms which will appear on the final document, and the ones which will have to be excluded, then the selected toponyms have to be adequately placed. The techniques of representation of the relief have direct influence over these choices. Whenever objects in frontal projection are used to figure heights, like the stylized mountains in this 18th century map of Liguria (Blaeu 16..), the room available for toponyms becomes rare.

The accuracy of the location is diminished by the relief representation technique: it is impossible to be at the same time accurate in the location of the toponym and in the rendering of the continuity of the relief. The continuity has to be interrupted to give place to the name, creating a compromise between what is known of the location of the place and the necessities of the representation. We are now used to the fact that, if the density of inhabited places, and therefore of "important" toponyms, is too high for the scale, a choice will be made and a certain number of toponyms will not be present on the map. The criteria for this choice will normally lead to a document in which the density of immediately visible toponyms will be comprised in a range which is habitual for the reader. This habit explains the surprise that we can have when facing this Cassini de Thury map of the zone of Quimper (Brittany, Cassini de Thury 1783), where toponyms are litterally written one over the other and over the rendering of the relief.

The interpretation of the choice is apparently simple: the cartographer chose to give priority to completeness instead of readableness. The Cassini map being a vast and systematic operation of knowledge of the French territory which, at the time, was linked to demographical and statistical inquiries, it was normal to include every French bell tower in the cartographic document, which worked as a representation of the territory of the kingdom as well as a register of the places where subjects lived. However, we must think in terms of multiple available solutions for a single problem and consider the choice of one of them as significant, first of all of the fact that the techniques and conventions of the period allowed this choice: even readableness was probably not hardly affected by the superimposition of toponyms, since the practices of map reading were different.

The consequences of such choices and in general of past techniques and conventions can be enduring, since maps are sources for other documents, including non cartographic documents (lists of toponyms can be based on maps). Choices that were made according to technical constraints are transmitted to other devices that follow other requirements. Moreover, past techniques and conventions create reading practices and habits that can be extremely steady, to the point of being naturalized: in the same way as we are used to having the north in the upper part of the map, we are used to recognizing a toponym inserted in cartography as related to a precise point, or line, or surface, according to the toponym's position, font, or to the inclination of the sign. There is a place where the toponym "is expected to be", "according to our intuition" (Gelbukh et al. 2003). Actually, none of this is natural: these habits are the product of conventions so well established as to become invisible. By showing in their peculiarity the old techniques and conventions, the historical perspective allows us to complete the analysis of those that are still in force.

To produce. Since a human scientific activity is involved, the drawing of a new map corresponds to the production of a new spatial knowledge in which toponyms are included and by which toponyms can be modified (see Pansini 2007). Cartographers apply filters to their work: as regards toponyms, established instructions of central institutions are filters, as well as unwritten shared practices. As we go back in the past, it becomes more difficult to identify clearly the filter which was applied: we lack formal instructions, and references are made by the authors more to shared practices than to clear texts. But shared practices are at least as strong and strict as formal instructions, and like them they are linked with political, technical, and linguistic concerns: the filter, through which the toponyms too have to pass, is more difficult to recognize but not less present. Later on we will be discussing the process of naming which is the most evident example as regards toponyms, of the production of a new spatial knowledge transformed by the application of filters, instructions and practices. But even when a real process of naming is not recognizable, cartographic activity can interfere, willingly or by mistake, with what is known of places and of their names, or the map can be influenced by the sense carried by transparent toponyms. Our example will be the archipelago of les Sept îles, on Brittany's northern coast. From an etymological point of view, it is normally admitted that the French toponym les Sept îles derives from a misunderstanding of the Breton toponym ar Jentilez, which is opaque. Although the French toponym very clearly indicates a group of seven isles, there are not seven isles in this small archipelago, but five isles and a certain number of rocks. In a map of Brittany of the beginning of the 17th century (Tabula 16..) whose language is Latin, seven isles are represented, and the toponym is translated into Latin, when the rest of the toponyms are either in Breton or in French. Actually, this translation seems possible because the name les Sept îles was not yet steady and was not identified as a real toponym, that is a proper noun, but rather as a description of the geographic object. But the description is effective: there are clearly seven isles on the map, more in conformity with the name than with geographical reality. When the toponym of the archipelago disappears to leave place to the names of the single isles (Rouzic, Malban, Île de Cerfs), like in this 17th century map (Danckaerts 16..), the isles do not need to be seven: there is no risk of contradiction with the toponym.

In the 1627 map of Ancient Gaul, by the famous Nicolas Sanson (Sanson 1627, map), the toponym les Sept îles is obviously not written on the map. However, we cannot affirm that it is absent, since it appears in a symbolic form: the seven isles are indicated by a quickly recognizable constellation of seven objects. We cannot say that the Sept îles are properly represented in the map, since there is no conformity with the geographical reality, but their position is definitely indicated.

In this case, the toponym clearly affected the cartographic representation of the archipelago. Of course, the "cartes géometriques" of the end of the 18th century will not force the representation of the isles to coincide with the toponym, but besides the technical improvements and the new functions of cartography, there is a linguistic phenomenon at work: the toponym Sept Iles is by then a proper noun, so steady that it can stand the contradiction with its own image on a map. The role of cartography in this achievement is impossible to define, but connections are evident.

To name. In some cases, the conscious process of naming a place -that is to say to individualize it by giving it a proper noun- is still identifiable and therefore possible to study from a historical point of view. The historical approach differs from the etymological one because, whereas etymology retrieves an original sense for the toponym, history analysis the social and political processes that led to the naming. The insertion in maps of the new toponyms is the achievement of the naming process, but maps are present in all the phases.

In early modern and modern period, there are essentially two situations that led to a large process of naming: colonization and revolution. In both cases there is a new power which needs to establish itself. Giving new names to places is one of the practices by which this new power asserts itself and gives visibility to its establishment. The process of new naming becomes all the more systematic as the will to emphasize the breaking with the past becomes stronger. New cartographic documents are needed to record the change. J.B. Harley has definitively linked the history of cartography with power (Harley 2001) and the example of the new toponyms and of their cartographic insertion shows how this link is undeniable. After the French Revolution, the toponyms which bear references to the monarchy were transformed: Choisy-le-Roi became Choisy-le-Citoyen. It would be interesting to see which were the toponyms, among those who were transformed by the Revolution, that survived, with their new form, during the Empire and after 1815. There is in fact no Choisy-le-Citoyen in France by now. We can propose an hypothesis: the toponyms that, after being modified during the French Revolution, were able to pass through different regime's changes were those whose political references were less evident: those in which the king was not replaced by the citizen, but rather by a river, or a mountain. Actually, the choice of the reference to nature during a process of new naming is strongly political because it denies any belonging, but exactly because of this denial it remains acceptable for different regimes: the new form of the toponym can evolve and its sense can lose any relation with the original political process that led to the transformation.

A new power gives new names to old objects, but it also creates new objects to be named. This can be the effect of an administrative reform, as in the case of "départements" in revolutionary France, which were named for the first time in 1790. In the multiple conflicts that were generated by this reform, maps were used to assert visions and to influence decisions. Most of the new toponyms given to the départements proved themselves as lasting as this fundamental administrative reform. Natural references, mostly rivers, were chosen, and this absolutely political choice that looked neutral allowed the toponyms to survive through the years.

More gradual changes can also open the way to new administrative objects and consequent naming processes: it is the case nowadays in France with the "espaces de coopération intercommunale". These associations of local governments are created to favour cooperation. Guillaume Bailly (Bailly 2008) studied the criteria applied to their crucial naming process. The newly created toponyms of these numerous cooperation entities -18000 in 2009 - are nevertheless still absent from cartographic documents, which suggest that the process is in fact unaccomplished.

Linguistic considerations

Some scholars say that toponyms, and proper nouns in general are mere tags, without 'meaning' thus placed outside the general lexicon of a given language. Actually, quite a lot of toponyms are opaque and they even function as 'nominal blocks' in a text. This observation is also to to be seen in the perspective of traditional etymological research, which explains the words from a diachronic point of view. On the other hand, a large number of toponyms containing elements of the current language show us regular transparent structures.

In order to analyse the toponyms in a cartographic or lexical perspective, we propose a synchronic analysis and, even if a great number of toponyms are actually opaque, many are surprisingly transparent to the contemporary user of the language. Furthermore, a contrastive analysis shows us clear structural and semantic similarities between languages, even if internal structures differ. And direct translations of toponyms are numerous. These facts should be a base for our considerations concerning toponym selection for maps. From a structural point of view, toponyms are simple or complex. A detailed knowledge of the different structures is an important means of finding adapted solutions to their treatment in maps, even in a single language context.

Simple and complex toponyms. A simple toponym cannot be divided into smaller morphemes. They are typically opaque, that is they are not part of the general lexicon of the language, London, Luton, but can be so (the town of Bath). We consider lexicalized articles like in The Hague should be looked upon as simple toponyms, the definite article not being introducing any distinguishing element.

Complex toponyms present different types and degrees of complexity. They vary in number of constituents, their respective functions, and the internal morphosyntactic structure. Interestingly enough, some of them, expressing human experiences and preoccupations, can be rather complex, like Cape of Good Hope, Big Slave Lake.

Complex toponym forms vary in a given language and different languages present different morphosyntactic forms. We will examine some examples to illustrate this point. Complex transparent solid toponyms such as South|port, Cam|bridge, and George|town are interpretable for every Englishspeaking person ; but to analyse correctly Cam|bridge the native speaker has to know that Cam is a river. Complex open toponyms constitute another type of compounds: English Channel, Mount Everest, Rocky Mountains. Complex opaque solid toponyms differ from the previous category since one constituent is identified as recurrent but not understood, but nevertheless potentially analysed as prefix or suffix in toponym coining. These constituents can be opaque parts of the language we study like –ham in Immingham, Sheringham, or –by in Grimsby, Appleby or words of foreign origin : -grad, cordilera for example, as parts of toponyms.

In English non solid toponyms like English Channel, Mount Everest, the order between the components may vary so that the determining element is placed before or after the determined one. Other languages have their own order regularities. Furthermore, you will find prepositional constructions, (Straits of Dover, Stratford upon Avon), case structures (Land's End), which can take different forms (other than the genitive 's) and different order (e.g. postponed genitive) in other languages. For a more complete description see Löfström & Schnabel-Le Corre (in press).

Functional structures. In order to compare toponyms on a general level we use a double dichotomy; on the one hand, appellative versus proprial components, on the other, generic versus specific components. The specific component determines the generic one as in the British Isles, where British is specific. British is proprial, whereas Isles is appellative, a common word. Even proprials can be generics, as Columbia in British Columbia. In the example Black Sea both components are appellatives. The same analysis goes for South|port or Land's End even if the word formation varies. A prepositional construction, like Isle of Wight or Cape of Good Hope can easily be compared on a functional level with the other constructions. This enables a simple survey of constructions in different languages, a piece of information useful when planning toponym transformations.

Types of toponym transformation. The concept of "transformation covers the translation, the transcription and the transliteration of toponyms" (Kadmon, 2000). Import a place name to another language often implies an adaptation of the toponym to the rules of the target language. This adaptation concerns all linguistic levels, orthographic, phonological, morphological, syntactic and pragmatic. The result of this adaptation is a specific form of toponym, the exonym. An exonym is a "name used in a specific language for a geographical feature situated outside the area where that language has official status, and differing in its form from the name used in the official language or languages of the area where the geographical feature is situated. Examples: Warsaw is the English exonym for Warszawa; Londres is French for London." (Kadmon, 2000). The toponym as it is pronounced and written in the language spoken in the geographic zone where the topographic object is located is called endonym.

Linguistic choices. The inscription of a toponym on a map also implies a choice of the linguistic form. The question of endonyms and exonyms is immediately actualised. Actually, it is practically impossible not to use the endonyms of foreign countries. For practical reasons, languages do not have exonyms for more than a limited number of foreign place names. As a matter of fact, most toponyms on maps are endonyms. The United Nations recommend to minimize the use of exonyms in international usage (see exonym in Kadmon 2000). This is not an uncontroversial issue because of the linguistic forms to use when integrating a foreign endonym in a given language, with its alphabet, special set of letters or signs. Potentially, all transparent endonyms can be transformed in other languages. In preparing a map, the choice between endo- and exonyms depends on editorial principles. Usually, the cartographer has to combine the two kinds of toponyms. Ordinary, general purpose maps, may give the corresponding endonym beside the established “own” exonym variant. But generally, the endonym is the most common form used on maps. In rare cases, there is a clear and unambiguous indication concerning the endo- or exonym status of the toponym on the map. In the cases where the territory in question belongs to the sphere of two or more language areas, there is a choice to make as to know whether ample linguistic variant forms should be present. In order to comment upon the practice of toponym inscription on maps we present some examples from a world atlas published in Sweden (BSV). The examples are taken from a page representing Great Britain, the English Channel and part of France. We will treat a selection of toponyms to illustrate our statement. There will not be any comments on character size, style, colour or localization of the toponyms on the map, but exclusively on the linguistic form.

The two countries are presented as Storbritannien and Frankrike, (‘Great Britain’ and ‘France’, respectively). Another choice could have been Förenade kungariket (‘United kingdom’), or even the longer form Förenade kungariket Storbritannien och Nordirland, and Republiken Frankrike (‘French Republic’). As a matter of fact, the choice of Storbritannien instead of Förenade kungariket is due to the fact that the official form with ‘United kingdom’ is almost unknown to the public and hardly ever used in the press. The endonyms of the two countries are not present.

The English Channel is indicated as Engelska kanalen, the exact translation of the English endonym. Underneath, within parentheses, we can see the French endonym La Manche. The narrowest part of this stretch of sea reads Straits of Dover Pas de Calais, the English and French endonyms. No exonym is mentioned on the map because Swedish lacks such a toponym. It is necessary to know or recognize English and French to be sure what endonyms they are, and you cannot be sure they do not designate different parts of the strait. The only other Swedish exonym on this part of the studied map is Kanalöarna (‘the Channel Islands’) without any other indication. Besides England, Nordirland, Skottland and Wales, as well as Biscayabukten (‘Bay of Biscay’), no other exonyms can be found. As we mentioned, endonyms dominate, but compared with other maps (ICA and BBL) you can note differences of toponym choice.

BSV		ICA		BBL	
Exonym	Endonym	Exonym	Endonym	Exonym	Endonym
Storbritannien	-	*Storbritannien*	-	*Storbritannien*	-
England	=	*England*	=	*England*	=
Nordirland	-	*Nordirland*	-	*Nordirland*	-
Skottland	-	*Skottland*	-	*Skottland*	-
Wales	=	*Wales*	=	*Wales*	=
-	*Lyme Bay*	-	*Lyme Bay*	*Lymebukten*	-
Engelska kanalen	*(La Manche)*	*Engelska kanalen*	*La Manche*	*Engelska kanalen*	*(La Manche)*
			English Channel		
-	*Straits of Dover*	-	*Straits of Dover*	-	-
-	*Pas de Calais*	-	*Pas de Calais*	-	*Pas de Calais*
Kanalöarna	-	*(Kanalöarna)*	*Channel Islands*	*Kanalöarna,*	-
				(Normandiska öarna)	
Frankrike	-	*Frankrike*	-	*Frankrike*	-
Biscayabukten	-	*Biscayabukten*	-	*Biscayabukten*	-
-	*Golfe de Saint-Malo*	-	*Golfe de Saint-Malo*	*Saint-Malobukten*	-
-	*Baie de la Seine*	-	*Baie de la Seine*	*(Seinebukten*	*-)*
-	*Monts d'Arrée*	-	*Monts d'Arrée*	*(Arréebergen)*	*-)*

The toponyms listed here are only the ones that have, or have not, been represented as exonyms in the maps in our comparison. The great majority of toponyms are English or French: Hastings, Portsmouth, Isle of Wight, Falmouth Bay and Dieppe, Le Havre, Pointe de Barfleur, Baie de Lannion, etc. The atlases are BSV and ICA, two world atlases with 120 to 140 pages of maps. BBL is a general Swedish encyclopedia with special maps in the articles, concerning France, Great Britain, English Channel, etc.. Looking at the examples from the three sources, we can see that the encyclopedia has a tendency to indicate more exonyms than the two atlases. This might be due to the fact that the maps appear in connexion with the Swedish text, where exonyms can be expected. It is notable that only BBL gives the exonyme Lymebukten, and astonishingly, in another more detailed map in this same encyclopedia, this bay will be indicated as Lyme Bay, an endonym, at the same time as not only Saint-Malobukten, but also the exonyms Seinebukten and Arréebergen have been chosen for the endonyms Golfe de Saint-Malo, Baie de la Seine et Monts d'Arrée.

The endonym Golfe de Gascogne has not been used in any of the maps studied. The Swedish exonym Biscayabukten being quite established, the publisher does not seem to wish to give any information on the endonym, which is actually very different from the exonym. This choice can be compared with the ICA map where the exonym Engelska kanalen and the two endonyms English Channel and La Manche are indicated.

With the exception of old established exonyms, most exonyms are translations where the determined (generic) term designates a topographic object (bay, island, mount), with a proprial as determining (specific) term.

General recommendations to use endonyms more or less systematically is opposed to the evident possibility to translate transparent endonyms if you know the language in question, as we have seen in the examples. On the other hand, for foreign languages which are less well known, you often find transformations where the endonym is kept with an appellative component added to it in order to clarify what kind of topographic object it is, a piece of information which is already in the endonym. This is a problem which is even more complicated in transformations between languages with different alphabets or different sign systems.

As we have seen, the choice of the linguistic form concerns endonyms versus exonyms, official or longer forms versus short variants of the toponyms. There is also a choice to make concerning upper and lower case characters, bold or italic type, or capitals (choices which can have a signification other than linguistic). Orthographic considerations also concern hyphens and diacritics. In order to have unambiguous forms of endo- and exonyms, the endonym diacritics must be respected. In translitterations between alphabets, language-bound principles might produce different exonyms for one given endonym. Furthermore each language has traditionally accepted translitterations which might not respect new principles. This aspect is even more important to consider in our modern world with fast, multilingual worldwide communication, where we have to take into account that maps are not consulted independently from texts.

Conclusion

The toponym is not only a linguistic string of letters or signs, and its variants, integrated in the structure of a given language (endonyms), but it is also present under numerous forms (exonyms) in other languages. The special linguistic context influences the choice of the toponym variant. Maps present toponyms from different languages. The map is a linguistic context in which the language in which a given toponym is written is not clearly indicated, although the general language of the publication might be known. Given that maps are used as illustrations and data suppliers in connexion with texts of different languages, it is important to avoid ambiguities, and the United Nations recommendations are proposed with this objective. A challenge for cartographers, when referring to one specific geographic object in the world, is this linguistic complexity and the interconnexion of maps, databases, registers, statistics and texts in different languages. Avoiding exonyms, as the UN suggest, is a methodological simplification. But such a simplification can lead to excessive complexity, when it is not yet in conformity with cultural habits, in this case with reading practices.

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