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Abstract

In this paper I discuss various issues directly related to the study of Breton dialects, and to the practice of linguistic geography. Some of the questions that will be considered are: Where does the border pass between two contiguous dialectal areas? How can the geographical distribution of the varieties of a language be explained? What factors (social, economic, cultural, religious, political, etc) can be correlated with this geographic distribution?

Keywords: Linguistic geography, dialectometry, dialectal borders, sociocultural motivations, Breton

1. Introduction

Based on the study of Breton (Celtic), this paper supports the hypothesis of a link between linguistic geography and the distribution of sociocultural features. This study is based on a previously undescribed Breton variety spoken in La Forêt-Fouesnant (COSTAOUEC 1998). It also draws on the linguistic material available in the *Atlas linguistique de Basse-Bretagne* edited by PIERRE LE ROUX (from 1924 to 1963). The methodology is based on a dialectometrical approach developed by GARY GERMAN in his PhD thesis on the Breton of Saint-Yvi, Finistère (GERMAN 1984).

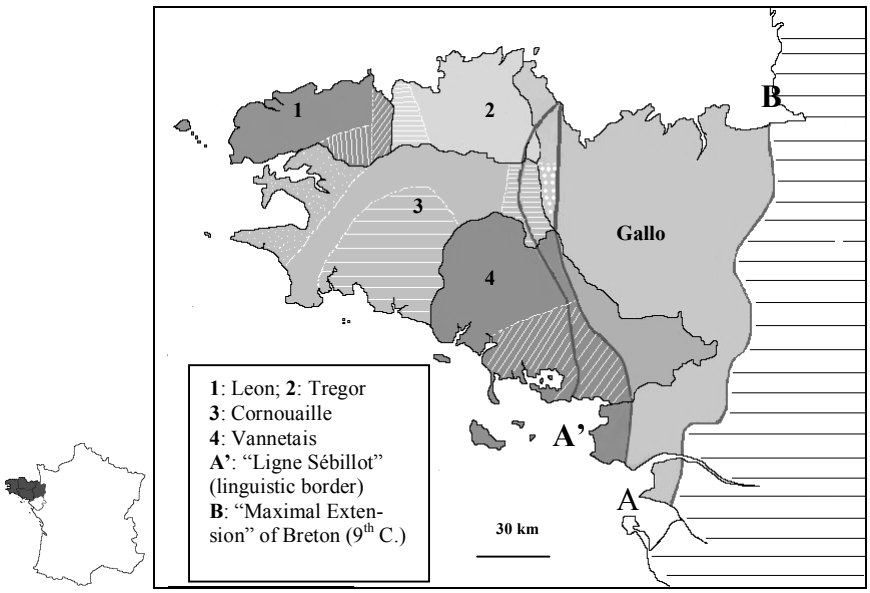
A comparison of the phonetic material between the variety of La Forêt-Fouesnant (henceforth LFF) and the 77 points of investigation in the *Atlas linguistique de Basse-Bretagne* (hence *ALBB*) had made it possible to define the areas of dialectal proximity. Interestingly, the cartography of the phonetic distribution matches with the cartographies of matrimonial practices, traditional clothing, and choreographic repertories.

I begin with a short overview of Breton dialectology (section 1), followed by the methodology applied for this study (section 2). I then present the detailed linguistic results which are compared to some sociocultural practices. In section 4 I illustrate the linguistic and cultural parallel by a close look at two localities situated on the dialectal border. In section 5 I give some partial information on the northern border of the dialectal zone of strong proximity with LFF.

2. Overview of Breton dialectology

According to the mainstream literature (FLEURIOT 1980; GUYONVAC'H 1985; LAMBERT 1997; ABALAIN 2000 *inter alia*), dialectal limits of Breton follow the borders of the old dioceses of Western Brittany. This approach distinguishes the

varieties of the dioceses of *Leon*, *Tregor*, *Cornouaille* and that of the Breton-speaking part of the diocese of *Vannes* (Map 1).



Map 1: Dialectal areas of Breton (following the limits of the old dioceses of Western Brittany)

These four zones are clearly separated from the Gallo area (Romance) which starts to the east of a "linguistic frontier" (landmark A' on Map 1). The border between Breton-speaking and Gallo-speaking areas has been the subject of several studies (BROUDIC 1997 for a review), according to which the linguistic frontier has moved westwards over time, towards the extremity of Brittany (e.g. from A to A'). The border seemed to be stabilized by the end of the nineteenth century, along the linguistic line drawn by PAUL SÉBILLOT (1878). A recent study by LENORA A. TIMM (1980) showed that the border moved again during the last century. TIMM noted that Breton in *Basse Bretagne* [the Breton-speaking area] appears to be "surviving in islands strung throughout a widening sea of French speakers'…" (TIMM 1980: 29). The "Sébillot Line" (A'), although dated, remains a reference. BROUDIC (1997) has showed that this limit has not disappeared under the generalization of French in Brittany's territory. Nevertheless, scholars prefer to think now in terms of restriction of Breton's social uses, rather than in terms of reduction of its geographical extension (TIMM 1980, BROUDIC 1995, COSTAOUEC 2002).

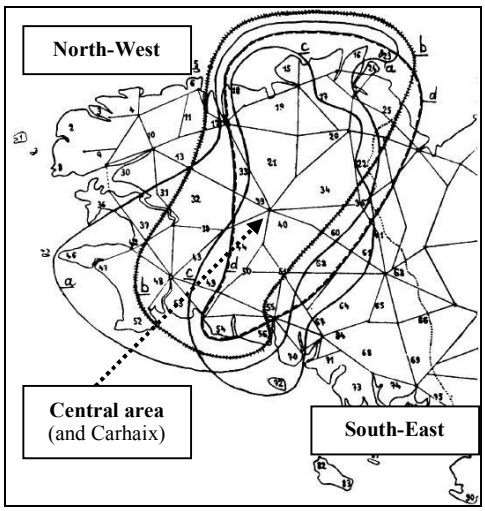
Dialectal distinctions based on diocesan boundaries have certain socio-historical motivations. Indeed, since the tenth century the dioceses were the institutional framework of Breton life and kept this role until the French Revolution of 1789. Moreover, part of the Catholic Church in Brittany (Jesuits being most active in this field) applied the so-called *règle d'idiome* (the use of Breton, instead of French) in pastoral activities, namely for preaching, confession and catechism (MINOIS 1991). This choice was not obvious for the Catholic high clergy and it caused internal

debates and hesitations (LAGRÉE 1992). The *règle d'idiome* implied everyday interaction in Breton between priests and parishioners and gradually led to some *de facto* Breton standards, mainly specific to each diocese. The importance of the linguistic factor in Church organization can be illustrated by the ancient division of the diocese of Saint-Malo between its Breton-speaking area and its Gallo and French-speaking area. Furthermore, numerous religious documents in Breton (missals, catechisms, prayer books, etc.) were published under bishops' authority (LAGRÉE 1992, COUROUAU 2008). In general, the authors, often also priests, chose written forms close to the dialect of their parishes.

Still, dialectal varieties do not correspond entirely with diocesan territories. Alternative cartographies were proposed, identifying intermediate linguistic areas between the large traditional dialectal areas. These transitional zones are indicated by hatching on Map 1. One can find, sometimes, on such maps a reference to a historical eastern limit of the Breton's geographic extension during the ninth century (landmark B on Map 1). Following LOTH (1893) this line is considered the historical limit between Celtic and Romance domains, as a result of the Breton immigration from Wales and Cornwall between the fifth and seventh centuries. FALC'HUN (1963, 1981) has challenged this analysis by arguing that LOTH's line marks a stage in the French expansion within the ancestral Celtic domain. For FALC'HUN, the course of this linguistic line, which incurves westwards under the influence of the French-speaking cities of Rennes and Nantes, could rather attest the expansion of French.

The most radical and productive theory in Breton linguistic geography has been developed by FRANÇOIS FALC'HUN, in *Histoire de la langue bretonne* (FALC'HUN 1963). Working on data from LE ROUX's atlas, FALC'HUN clearly identified three distinct dialectal areas: The first one to the north-west (mainly corresponding to the area called *Leon*); the second one to the south-east (the *Vannetais*); the third one in the vast central zone which extends from the south-west peninsulas (*Pays bigouden*) until *Tregor* on north-east (Map 2 below).

FALC'HUN showed the importance of economic exchanges in the gradual advance of linguistic changes within the central zone (including influences of French). He also pointed out the decisive role of the town of *Carhaix* (indicated by the arrow) in the diffusion of the innovations which distinguish the central zone from the two peripheral areas. This town is located at the heart of the Breton-speaking Brittany, where the most important trade routes crossed.



Map 2: FALC'HUN (1981) Fig. 6: Breton dialectology. The central area and the peripheral zones

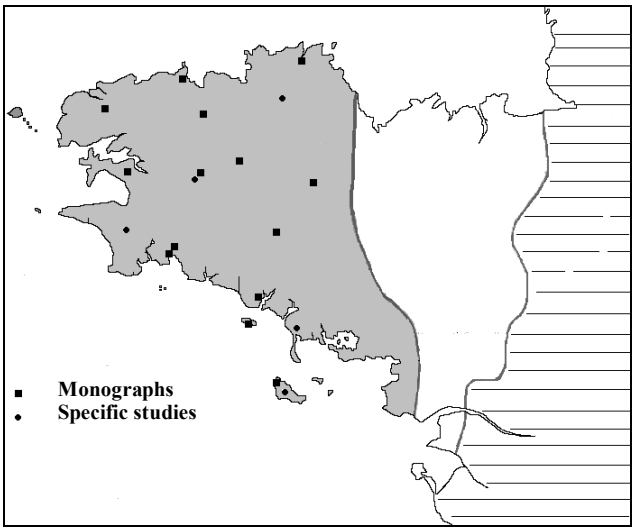
3. Methodology for measuring dialectal proximity

The main task of linguistic geography is to locate and compare linguistic variation, usually dialectal variation. However, dialects are not consistent units that are sharply differentiated from neighbouring dialects and dialectal phenomena are rarely exclusive to a single dialect. Isogloss networks clearly show this reality. Maps in the atlases, even "second generation maps", cannot answer a simple question: How much do two dialects differ? This question leads to a new set of methodological and theoretical problems: What is a good indicator of dialectal difference? Does this indicator make it possible to compare a specific local variety with other points of investigation in an atlas for example? Does this indicator allow for dialectal differences to be *measured*?

These are well-known questions for scholars working in dialectometry. The term *dialectométrie* was introduced by JEAN SEGUY (1973) into Romance studies. Nowadays, it refers to a type of analysis of linguistic atlases' data using mathematical und visual methods borrowed from statistics, numerical quantitative classification and modern computer-assisted cartography, with the aim of measuring and analyzing linguistic similarities (and distances) between the inquiry points of the atlas on study (GOEBL 2002, 2005, 2006). The goal of dialectometry is to advance our knowledge in the domain of diatopic networks, the space component of the general linguistic change. Teams of linguists, in Austria, the Netherlands and the USA, have developed methods for computerized data-processing. Moreover, HANS GOEBL and his team also proposed an original theoretical framework called "Basilectal management of geographic space by *Homo loquens*" (GOEBL 2002, 2010). Dialectometry is thus a very active and productive field of study in linguistics.

My project, far from the sophisticated means implemented in modern dialectometry (as the 'Levenshtein algorithm' used in Groningen; NERBONNE & HEERINGA 2001), was based on simple considerations and semi-manual processes.

The issue of the available linguistic material was crucial. The Breton-speaking area is only incompletely described in monographs (Map 3) and there are no linguistic studies available for most of the territory, notably for the area described by the present work. Besides the rare monographs, one can find some studies on folklore or vocabulary, of uneven quality, regularly published since the end of the 19th century[1].



Map 3: Distribution of monographs and specific studies on Breton dialects

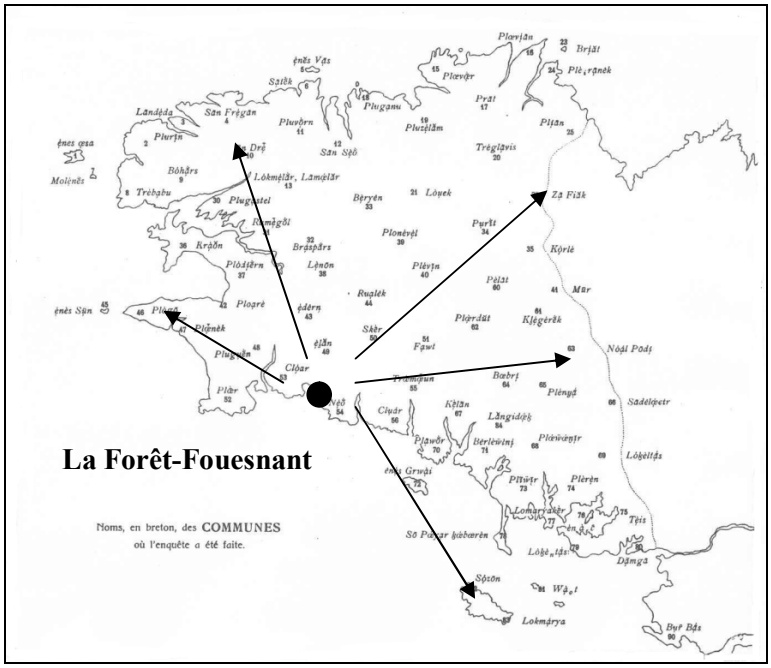
Nevertheless the most reliable and exploitable data come from a set of linguistic atlases:

- LE ROUX, PIERRE (1924–1963): *Atlas linguistique de Basse-Bretagne*, 6 volumes, 77 points of investigation, 600 maps.
- LE DU, JEAN (2001): *Nouvel Atlas linguistique de Basse-Bretagne*, 2 volumes, 187 points of investigation, 600 maps.
- LE BERRE, IWAN & LE DU, JEAN (dir.) (2008): *Ichtyonymie bretonne. Atlas linguistique de la faune marine en Bretagne*. Trilingual version: French, English, Breton. Brest: CRBC and IUEM, Université de Bretagne occidentale. On DVD.
- ROLAND, PASCAL (1994): *Atlas linguistique de la région de Pontivy, Morbihan – Côtes d'Armor*, 2 vol.

LE ROUX's pioneering atlas follows the principles established by GILLIÉRON for the *Atlas linguistique de la France* (GILLIÉRON & EDMONT 1902–1910). It presents "first generation" maps on which the linguistic forms collected during fieldwork are phonetically transcribed in Romanists' alphabet (Map 4).

[1] For an updated list of studies on Breton's dialects, see the personal Website of the linguist LOÏC CHEVEAU: www.loig.cheveau.ifrance.com

Unlike FALC'HUN who treated LE ROUX's data to define isoglosses, GARY GERMAN's specific method of analysis consisted of observing phonetic differences between lexical or grammatical forms in Saint-Yvi and the points of investigation of the atlas. Following GERMAN, I wanted to identify the "dialectal gap" between each one of the 77 points of investigation in LE ROUX's atlas and La Forêt-Fouesnant (which was not a point of investigation in the *ALBB*).



Map 4: *ALBB* by LE ROUX. Map 1 Points of investigation. Localization of La Forêt-Fouesnant

The method consists of allotting numerical values to the phonetic differences and similarities between the reference dialect and the 77 other localities. This allowed demarcating different geo-dialectal areas according to their average score. This method was based on the following hypotheses:

- A consonant which appears in a precise phonetic context, in a stable way, in a well defined area, has a great probability of having occupied this place for a long time.
- According to this hypothesis, phonetic differences would indicate dialectal differences.
- This would allow identifying an indicator of dialectal proximity between the reference dialect and the other localities.

The theoretical justification of this hypothesis rises from the basic principles of linguistic reconstruction (LEHMANN 1992; BEEKES 1995) concerning the relative diachronic stability of consonants.

In Table 1 I present some of the simple phonetic criteria I used for the comparison. As it is noted, this is a basic system compared with the available tools for modern dialectometry:

form [z-] versus [s-]	E.g. 'dress' [ze:] ~ [saɛ] ~ [say]
form [ɥ-] versus [v-]	E.g. 'trees' [ɥe:n] ~ ['vezen]
form [ʃ-] versus [s-]	E.g. 'to listen to' [ʃi'law] ~ ['silu]
form [Ø-] versus [v-]	E.g. 'tomorrow' [a'hoas] ~ [va'hoas]
form [f] versus [hw-]	E.g. 'February' ['fɛwa] ~ [hwɛo]
form [-f-] versus [-h-]	E.g. 'late' [di' fɥe:d] ~ [di' hɥed]
form [-Ø-] versus [-R-]	E.g. 'truth' [va'jõn] ~ [ve'Rjõn]
form [-Ø-] versus [-z-]	E.g. 'today' [hju] ~ [hizjo]
form [-χ] versus [-h]	E.g. 'girl' [mjɛχ] ~ [mjeh]
realization [- k] versus [- χ]	E.g. '(market) town' [burk] ~ [burχ]
Etc.	

Table 1: Some criteria used for phonetic comparison

Numerical valorisation of the phonetic differences was based on a simple principle: when the form under examination was dissimilar from a form attested in La Forêt-Fouesnant, it scored "1"; when the forms under comparison were similar, the value was "0". Each difference was noted and, for the same item, the score of a point of the *ALBB* could vary from 0 to 2 (3 for some rare cases) Thus, the more a point of investigation differs from the reference point, the higher its "score". This is illustrated in Map 5, below, showing the exploitation of the *ALBB*'s item n° 298, 'Trees, a tree'. The data processing was carried out with Microsoft Excel spreadsheets, on the basis of about half of the atlas' maps. That means that more than 35,000 forms were examined, corresponding to less than 500 items[2]. I give below an example of the exploitation of Map n° 298 in the *ALBB*:

La Forêt-Fouesnant form for 'tree' is [ɥe:n] ([wə̈e̯□n] in LE ROUX's transcription), to be compared with other dialectal forms:

			Criteria and values				
Point	**Name**	**Form**	[wə̈-] ~ [v-]	[wə̈-] ~ [gwə̈-]	[-Ø-] ~ [-z-]	[-Ø-] ~ [-h-]	**Total**
49	Elliant	[wə̈e̯□n]	0	0	0	0	**0**
53	Clohar-Fouesnant	[wə̈□n]	0	0	0	0	**0**
54	Nevez	[wə̈□n]	0	0	0	0	**0**
55	Tréméven	[wə̈□n]	0	0	0	0	**0**
52	Plomeur	[və̈□n]	1	0	0	0	**1**
48	Pluguffan	[və̈□n]	1	0	0	0	**1**
46	Plouhinec	[veˈzen]	1	0	1	0	**2**
36	Crozon	[veˈzen]	1	0	1	0	**2**
1	Ouessant	[wə̈ˈzen]	0	0	1	0	**1**
4	Saint-Frégant	[veˈzə̈□n]	1	0	1	0	**2**
63	Noyal-Pontivy	[wə̈heˈn]	0	0	0	1	**1**
66	Saint Allouestre	[gwə̈zeˈn]	0	1	1	0	**2**
Etc.							

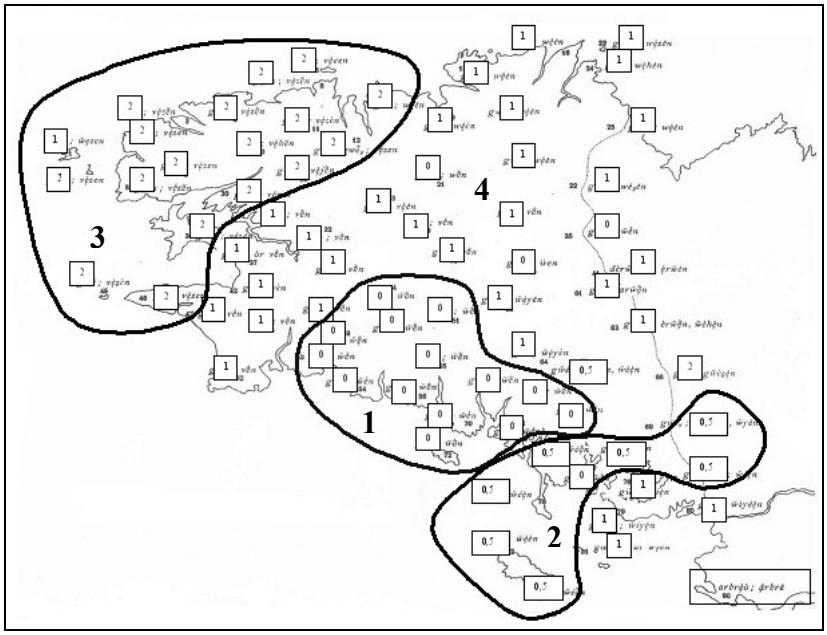
[2] I put many items aside when the forms under study were too different to be analyzed in terms of phonetic differences. It is the case for lexical forms like *mintin*/*beure* 'morning' (Map n° 30 in the *ALBB*). It was the case also for many verb phrases as e.g. 'when I had' (Map n° 90 in the *ALBB*).

Table 2: Analysis of Map n° 298 “Trees, a tree” (example scores)

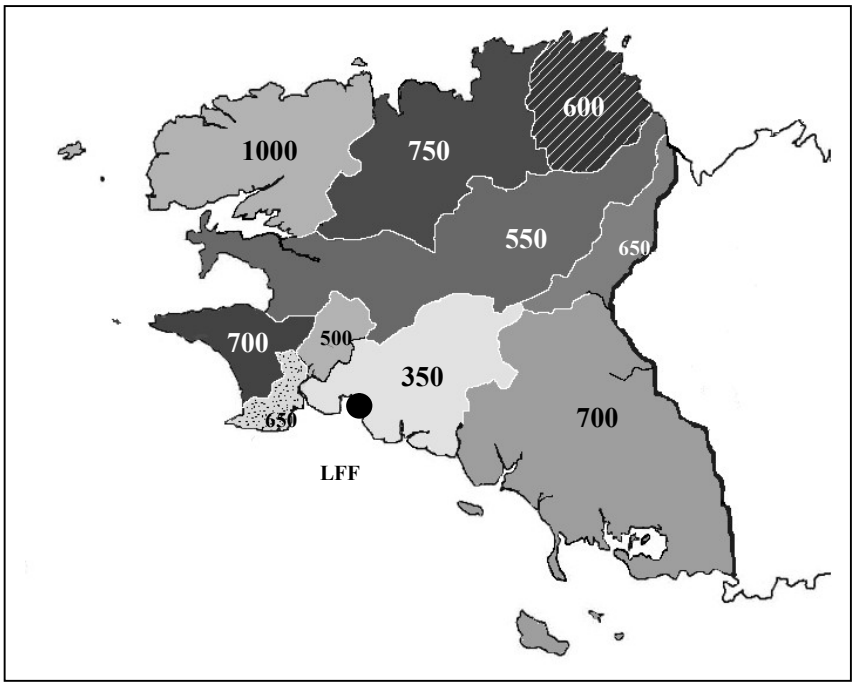
3.1 Cartographic representation of the results

Map 5 (below) represents the space projection of the scores obtained for the various points of investigation in the *ALBB*, for the item “Tree”. This map shows some interesting groupings. Zone 1 located near LFF presents scores at 0, i.e. of null differences with the reference point. Zone 2 shows tiny differences and could almost be added to zone 1. On the contrary zone 3 shows the most important differences (majority of 2). Between these definitely distinct areas there is a central zone largely open to the east and north-east. For this map, the Breton variety of LFF presents great similarities with the *Vannetais’* forms. This is not the case for all the items I treated, but it appears that there are indeed appreciable affinities between LFF and the varieties located to the centre-east of the Breton-speaking area.

I made this kind of analysis for the *ALBB’s* maps I had selected and I transferred the total score for each point of investigation to an intermediary map. Then I calculated the average score by zone (rounded up results are showed in Map 6 below). Defining the geographical limits of these zones was a crucial issue. The 77 points of investigation in the atlas form a loose network. I considered in an arbitrary way that the results obtained for a point of investigation applied to a group of 4 or 5 neighbouring rural districts (that is a *canton* in the French administrative division). On the maps I present then boundaries between dialectal zones that follow grouping of *cantons*. This is a debatable choice: the *canton* is an administrative entity but nonetheless it can be quite homogeneous geographically and culturally; however in several occasions, dialectal borders are fuzzier and do not correspond to administrative limits. This solution does not indicate where the frontier between two neighbouring dialects is located. I will develop this issue in section 5, below.



Map 5: Analysis of the *ALBB*. Map n° 298 "A tree, trees"



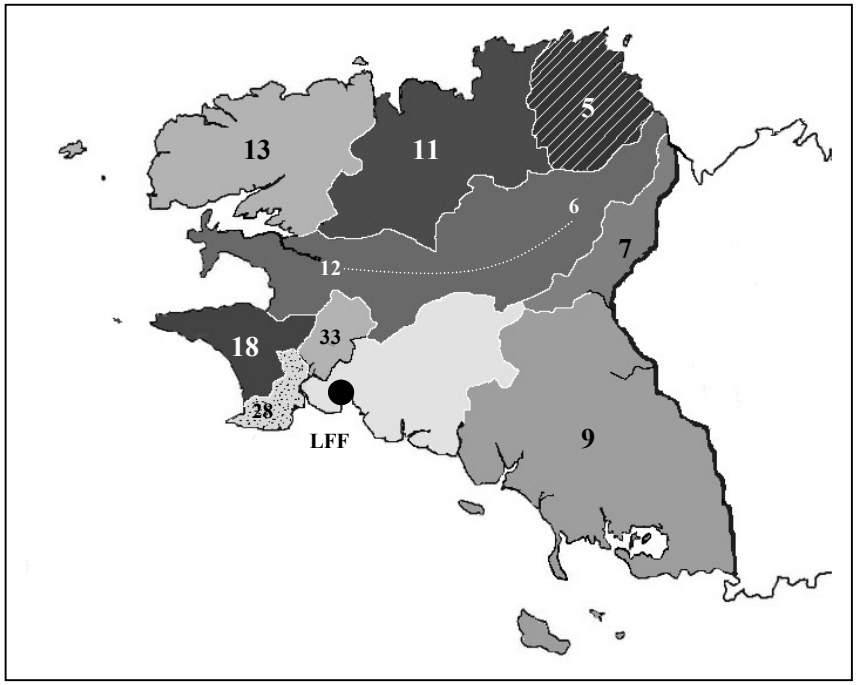
Map 6: Distribution of the dialectal zone following our analysis (average of phonetic differences with the reference point La Forêt-Fouesnant)

Map 6 illustrates the distribution of dialectal areas I obtained by this method. A zone of strong proximity (average difference 100) is located in the vicinity of LFF, including the commune of Saint-Yvi which GERMAN studied (not shown on this map). A zone of low-ranked differences (average score 350) extends around it. To the northwest stretches a zone of greater differences with LFF (indicator = 1000). To the north extends a zone the average of which is 750. To the southeast, the *Vannetais* is also a zone of important differences (indicator = 700). To the southwest, towards the *Pointe du Raz* and the *Pays bigouden* there is another high score area (indicator = 700). A zone of medium differences (500-550) stretches through the Breton-speaking area, along a southwestern / northeastern axis.

Except for the territories of the south-western point of Brittany (indicator = 700), the results agree in a remarkable way with FALC'HUN's conclusions. It can be concluded from these observations that the exploitation of data from LE ROUX's atlas by different methods leads to convergent results.

Results are more convincing if translated to the form of a "gradient of dialectal difference" (Map 7). A gradient is a rate of variation of a value according to a parameter. The concept of "champ gradient de la gasconnité" was introduced by SEGUY (1973) to describe the spatial organisation of the Gascon-speaking area. This concept was taken up and theorized by GOEBL as a "matrix of (dialectal) similarity" (GOEBL 2006). On this basis it is possible to build "maps of similarity" which

constitute the central heuristic axis of the Salzburg's school of dialectometry (GOEBL 2006). Once again, my approach looks simplistic compared with the mathematical tools developed by dialectometricians. I compared variation in the number of phonetic differences and the geographical distance between LFF and a point arbitrarily situated in the middle of the zone under consideration. The "formula" is then: Number of differences divided by Distance LFF/Point X (in kilometres). Map 7 shows the result of this calculation.



Map 7: "Gradient of dialectal difference" between LFF and the different areas

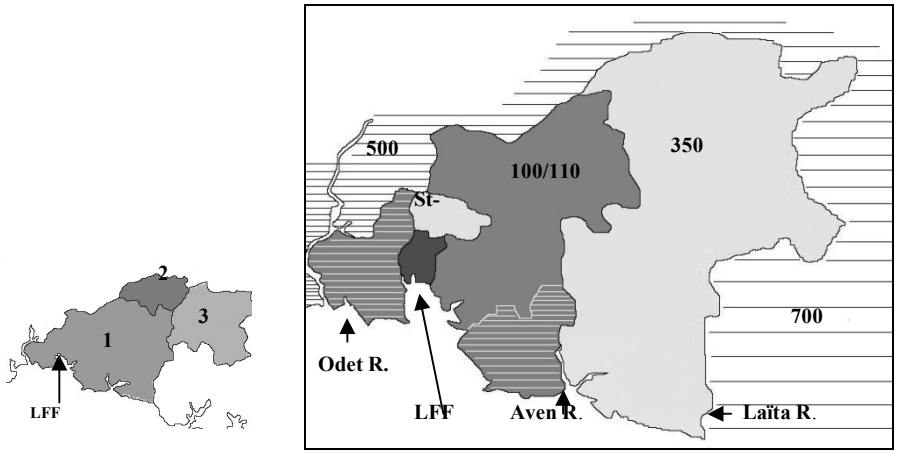
One can expect of course that geographically distant zones present important phonetic differences with the point of reference. This is the case for the northwestern area in term of raw results (indicator = 1000). In term of "gradient of dialectal distance" things are different: the northwestern zone has a relatively low gradient (13), according to its remoteness from LFF, while much nearer zones show high gradients (e.g. the "550" zone to the north of LFF, gradient = 33, or the "650", "700" zones towards the point of Brittany, gradient = 28 and 18). That means that, for the mode of comparison chosen here, important phonetic differences occur over short distances, showing sharp dialectal discontinuity. Interestingly, the gradient is very low for the eastern zone (*Vannetais*): that can be correlated with cultural features which suggest a linguistic continuity between the zone close to LFF and the south-east of the Breton-speaking area. Such data, which I did not exploit until now, need to be corroborated by more refined calculations and to be checked against studies of the literature and additional fieldwork.

4. Focus on the zones of strong similarity

I will focus now on a zone of strong similarity with La Forêt-Fouesnant Breton, which corresponds to average differences equal to or less than 100 and to the "350" zone (Map 8, next page).

The "100" area includes the territories of two complete cantons (that of Fouesnant and Rosporden) and part of two other cantons (Scaër and Concarneau). In GERMAN's work the "110" zone (strong proximity with Saint-Yvi's variety) was oriented perpendicularly to the coast. The "100" zone whose reference is LFF has a more coastal extension (hatched surface on Map 8), but also stretches as far as the rural town of Scaër to the northwest. Observed on large scale, the geographical limits of this zone are to the west the Odet River to the east the Aven River. The northern border is more interesting because no major topographical obstacle marks it. I am more interested in this limit in the present study.

The "350" area (weak differences) stretches to the east and slightly to the north of the zone of strong proximity (Zone "100"). On seaside, the eastern limit is the Laïta River, and the border continued north along the Ellé River, an affluent of the Laïta. Further, to the east, the indicator passes abruptly to 700, without transition. The "350" area corresponds more or less to the traditional *broioù* (in French "*pays*" i.e. culturally homogeneous areas), the *Bro Aven*, the *Bro Chtou* and partly to the *Bro Pourlet* (Map 8, small map on the left).



Map 8: "100" and "350" areas around La Forêt-Fouesnant (small map on the left: 3 traditional *Broioù*: 1 *Aven*, 2 *Chtou*, 3 *Pourlet*)

4.1 Covering of cartographies

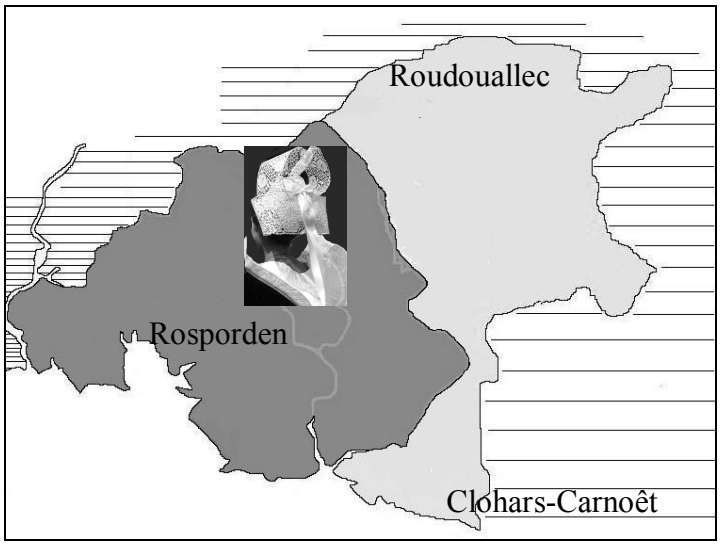
I will now show that the limits of the "350" area largely follow those of certain local cultural phenomena. FALC'HUN (1963) had already suggested a possible over-lap between the dialectal areas and the zones of Breton traditional dress. GARY

GERMAN had made the same observations in connection with the zone around Saint-Yvi. I illustrate the phenomenon by extending the comparison to the cartography of the various types of traditional dance and to the cartography of the geographic origin of the spouses of some Breton speakers from LFF (COSTAOUEC 1998).

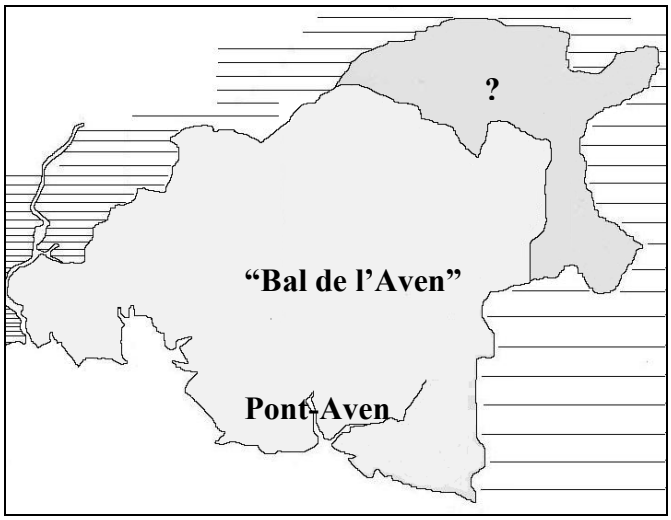
Map 9 shows the territory of the traditional headdress known as *Giz Fouen* (in the style of the town of Fouesnant, in Breton), characterized by a broad collar, important wings and long ribbons. Beyond this limit, the headdress' form changes radically, that is to the west on the right bank of the Odet River, to the north towards Quimper or to the east. In fact the so-called *Giz Fouen* has spread into the zone of influence of the town of Rosporden (CRESTON 1978). Nowadays Rosporden is a small town of little importance, but formerly it has played a major role because it was located at the junction of two important commercial roads, one covering the southern part of Brittany, the other leading towards Carhaix and the northern coast. Rosporden had an important cattle fair and it was also a centre of diffusion for manufactured goods in the area (in particular cloth fabrics), therefore a point of diffusion of innovations within the rural world of the area. Rosporden's influence has been particularly important during the second half of the nineteenth century in the standardization of local cultural behaviours (OGÉE 1843; CORNETTE 2005).

Map 10 shows the zone of extension of a style of dance called "Bal de l'Aven". This dance is executed by groups of two couple of dancers, whereas the older dances are almost always carried on in chains. It adopts a slipped step, very different from the dynamic and hopping style of the "Mountains' gavottes" (to the north). The style originates from the area of the town of Pont-Aven (GUILCHER 1963) and has spread gradually into a vast zone as far as the Odet River to the west. On the right bank of the river the "bigouden style" with marked differences is most common. To the east of the Laïta River begins the area of dances in chain (*andro* and *hanterdro*), characteristic of the *Vannetais*.

A comparison between Maps 9 and 10 (next page) shows that the two cultural features' areas follow almost the same layout, except for two places. The *Giz Fouen* does not extend to the east towards the town of Roudouallec or towards Clohars-Carnoët (along the coast). But the "Bal de l'Aven" was propagated to the south. In the north-east, a zone pertaining to the "350" area does not seem to be concerned by the *Giz Fouen* nor by the "Bal de l'Aven". This area corresponds more or less to the zone of Roudouallec (point n° 44 on the *ALBB*). In this case, dialectal features show great similarities with the other points of investigation in the "350" area, while cultural features are divergent. Here the limit of geographical representation on the basis of the *cantons* is apparent. The dialectal border goes certainly through Roudouallec, leaving other communes of the *Bro Chtou* apart from the "350" zone. This is true in particular for Gourin which is characterized by a particular clothing style and which is attached, from the choreographic point of view, to the "Mountains" style (dances in chain).

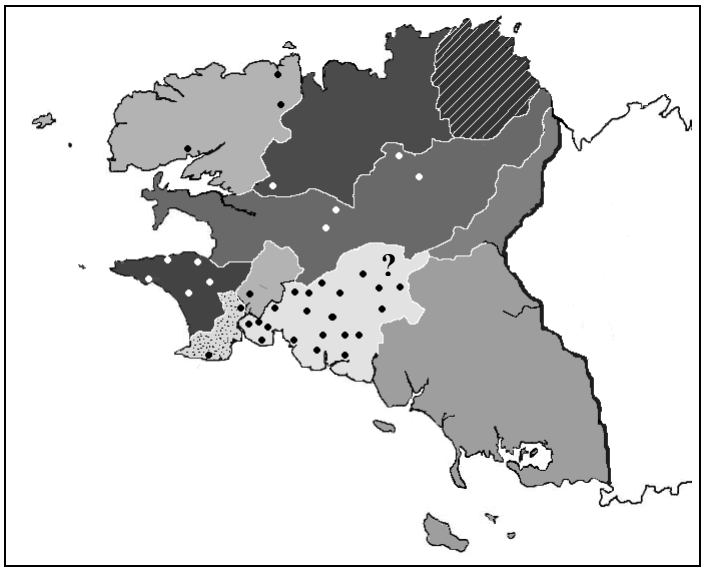


Map 9: Extension of the *Giz Fouen* (Rosporden's or Fouesnant's headdress)



Map 10: Extension of the dance style "Bal de l'Aven"

Map 11 represents the distribution of the places of birth of the spouse, non born in LFF, of some Breton-speakers of the village. In a remarkable way, the majority of the people were born in communes belonging to the "350" zone. Once again, the northeastern zone of the "350" area is conspicuous.



Map 11: Place of birth of the spouses –non born in LFF– of some Breton-speakers of LFF (COSTAOUEC 1998)

The comparison of these various maps shows an important linguistic and social cohesion of the population in the area: speaking appreciably the same variety of Breton, locals also adopted the same clothing fashion during the nineteenth century, they also adopted the same style of dance and, finally, they practiced an areal endogamy… An impression of cultural convergence thus emerges which subsumes the differences which are observable on the field.

4.2 Factors of homogeneity in the area

4.2.1 Geographical unity

The "350" area is characterized by its territorial continuity. It presents few natural obstacles to the east. Upstream from the town of Pont-Aven, the Aven River was not an obstacle to land circulation; its downstream part is navigable and was a shipping route. The southernmost limit of the zone is the coast. Sea transport offered important possibilities of contacts between the coastal towns and the economic centres accessible by waterway like Pont-Aven or Quimper, but part of the coast between Concarneau and the Aven River mouth is inhospitable.

The Odet River seems to constitute a clear border to the west. Until the end of the twentieth century people had to go to Quimper, 15 km from the shore, to find a bridge over the river, and towards the mouth, only a small ferryboat crossed between Bénodet and Sainte-Marine. However, the Odet River was a major trade route, used by an important fleet. Geography plays a less important role than history here. Before the Roman conquest, the border between Gallic peoples, *Osismes* and *Venètes*, fluctuated and was disputed, but territories to the west of the Odet

River have always been under *Osismes'* domination (GIOT et al. 1995). The eastern zone extending to the Aven River was influenced by the *Venètes*, though officially in *Osismes'* territory. The Odet River thus constitutes an ancestral cultural border between two major parts of Breton-speaking Brittany. On the whole, the zone "350" seems rather permeable to eastern influences, towards the *Vannetais*, whereas the dialectal border seems firmer to the west and the north-west.

4.2.2 Economic unity

The zone has an important agricultural tradition. Until now small-scale farms dominate, which practice breeding and "second rank" farming like oat, rye, potatoes, etc. Under economic conditions prevailing during the years 1858–1880, a period in which the large-scale agriculture slowed down (culture of corn and industrial crops in particular), Breton agriculture paradoxically experienced an important success (DÉSERT 1976). Then a period of relative prosperity started for farm owners and for servants and farm labourers as well. During this period many estates changed owners, making the networks of exchanges and solidarity within the rural world more complex. The number of farm owners increased while that of the sharecroppers decreased. The improvements in the economic conditions at the end of nineteenth century supported an increase in families' consumption, which, for example, spent more for purchasing manufactured products like cloth fabrics or soft furnishings. This resulted in a great diversification of clothing fashions (CRESTON 1978), with sharp distinctions between traditional cultural areas. In part of the "350" area, one result was the extension of the expensive and sophisticated *Giz Fouen*.

4.2.3 Religious unity

As everywhere in Brittany, in the "350" zone Roman Catholics were in the majority and religion has been a strong social bond. However, if faith was deep, interest for ecclesiastic functions was moderate in the area. GEORGES MINOIS (1991: 103) has published a map which shows data on priests recruiting in Brittany at the end of the nineteenth century. The "350" area provided few priests: one for more than 1250 inhabitants, compared with the *Leon* area for example (1 priest for 500 inhabitants). Furthermore, in this "350" zone, the Mass attendance moved back strongly in the 1960's, more than in other areas in Brittany.

4.2.4 Influence of the cities

This is probably a determining factor for the convergent/divergent evolution of the cultural practices in the zone, and perhaps for the linguistic practices. The role of the town of Rosporden seems central, owing to its geographical localization and its commercial influence. It is not surprising that its clothing style could have spread throughout its zone of economic and social influence and its role was decisive too for the westwards diffusion of the "Bal de l'Aven". Contrary to the homogenizing role of Rosporden, the city of Concarneau was a factor of differentiation. As a harbour and an old military garrison, the city was open to the Atlantic coast and became a French-speaking enclave very early. This city played a major

role in the process of progressive domination of French in the area, and reinforced the distinction between inland territories and the coast.

5. Where does the border go?

As GASTON TUAILLON stated (1976: 82), the dialectologist seeks "to establish a stable dialectal border to allow the mind to form a clear picture of the complex play of the interesting linguistic correlations woven between the dialects" [my translation]. Indeed, the layout of the borders between dialectal areas does matter because it partly determines the possibility for causal analyses. For the "350" area, the most problematic borders are to the north and the north-east and we need more detailed information on these places. I began systematic fieldwork in the rural districts which seem to be involved in the limits of the "100" area. I will present some observations on two communes "on the border" Elliant and Tourc'h (Map 12 below).

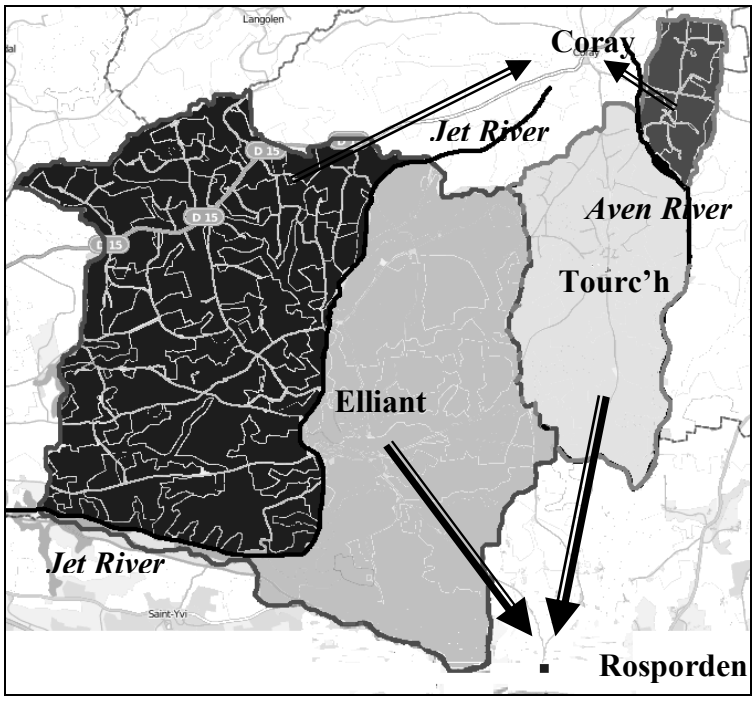
Both of communes are still active agricultural rural districts. Elliant is very wide and is crossed by the Jet River, which delimits two quite distinct zones: lowlands and plateau. Tourc'h stretches along a north-south axis. A part of the village stretches to the north of the Aven River, which is only a thin brook in this place and which barely marks the relief.

I investigated these two communes with farm owners. They are mainly dairy farmers, but in the lowlands most of the farms breed pigs. The working hypothesis I checked was that, as these farms belong to the same families for several generations, their current occupants can provide information on the networks of mutual aid which functioned in the area before the important transformations of agrarian techniques during the last fifty years. The observation of these social networks, as well of the traditional trade circuits, can provide information on the distribution of the territory between various parts of the population and perhaps help us to identify the basis of dialectal differentiation.

In Elliant the investigation, though rapid and incomplete, applied to farms of the plain and the plateau. The essential observation is that the networks of cooperation between farms (which are old memories now) were limited to the immediate proximity and an almost complete split existed between the farms on the plateau and those on the lowlands. For example, a farm called *Kerho*, overhanging the town centre of Elliant and very close to the river, did work only with the close farms on the plateau. Incursions into lowlands were limited to graze the cattle along the river.

In Tourc'h, the zone to the north of the Aven River was clearly distinct from the other part of the rural district, farms being held by close relatives who were accustomed to work together, without extending this cooperation to the farms of the south side.

Moreover, farms on Elliant's plateau as well as farms to the north of Tourc'h had commercial relations with the town of Coray, whereas farms located on the lowlands and to the South traded usually with Rosporden (Map 12).



Map 12: Elliant and Tourc'h, on the dialectal border of the "100" area

The image which emerges is that of communes whose administrative limits do not match with the reality of social networks and circuits of exchanges within the population. An economic and relational border cut the villages in two, each part having its own tropism. Can we infer from the observation of such features that they are correlated with dialectal distinctions? Certainly not in such direct terms. But it should be admitted that close populations, pertaining to the same parishes, living in the same municipalities, could have been involved in distinct social networks for a long time. Such a situation could have led to dialectal differentiations, being organized according to the attraction of two economic centres, Coray and Rosporden, each one being the heart of a zone of economic and cultural diffusion, possibly also at the origin of a complex process of dialectal homogenization or differentiation.

To evaluate the assumptions which remain, we have to continue with investigation along the assumed dialectal border. We have to carry out a meticulous dialectological survey with the last native speakers to check if historical economic, social and territorial differentiations correspond to linguistic differentiations.

5. Conclusion

I tried to illustrate in this paper the interest of a renewed analysis of data from LE ROUX's *ALBB*. My exploitation of the concept of "gradient of dialectal difference (or proximity)" remains embryonic, but by using modern dialectometrical tools it could be possible to develop this research even further.

The bond between dialectal and cultural features seems obvious. Until now however there is no proof to establish causal relations between the two orders of phenomena. Complementary studies have to be carried out. Fortunately, we have for *Basse-Bretagne* the recent *NALBB* by JEAN LE DÛ, complete with digitized data. Their exploitation according to an optimized version of the procedure suggested here would result in a wealth of information. It would then be possible to compare any Breton dialect with all the points of the atlas and with the points for which linguistic material will be collected in the future.

A rigorous scientific debate has to be organized on the comparison criteria, those with mine being too rudimentary. In particular we need to define criteria of weighting for the phonetic features that should be retained.

Fieldwork has to be carried out, in particular along the assumed dialectal frontiers, in order to improve our knowledge of the dialectal variation. A better use of regional and local history is necessary. We have to promote collaboration between linguists, anthropologists, historians and mathematicians to build the tools which will make it possible to model the social networks (including kinship) which seem to play a crucial role in the processes of dialectal differentiation and homogenization.

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