

How Can We Depict Standardization in the Linguistic Atlas? Case Study of Champagne and Brie (ALCB)

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1. Dialectology in the third generation

L'Atlas linguistique de la France (ALF) was published successively from 1902 to 1910. One of its major contributions to historical linguistics was probably the demonstration of many regional irregularities against phonetic laws without exception, which Neogrammarians advocated at the time. Phonetic change would occur regularly in every word if the word had not originated from analogy or borrowing. However, irregularities could also frequently originate from geographical variation or dialect borrowing. Therefore, does each word have its own history? Or does each dialect have its own history? This is an old and enigmatic problem for both historical linguistics and dialectology.

About 20 years after the publication of ALF, Albert Dauzat launched a new project of *Atlas linguistique de la France par régions* (ALFR) to further refine investigations of ALF. In 1955, Dauzat suddenly passed away, and the project of the new linguistic atlas was succeeded by Mario Roques until his death. It was Michel Lejeune who founded the linguistic atlas committee in the CNRS¹. Today, due to a long stretch of CNRS research, we can see linguistic atlases of 26 different regions of France. According to Jean-Philippe Dalbera, ALF is regarded as dialectology in the first generation, so he considers ALFR as dialectology in the second generation. During the first generation, concepts and theoretical backgrounds of the linguistic atlas had been established: methodology, transcription, mapping, etc. The second generation thereafter improved ALF and aimed to accumulate dialect data with higher reliability².

For instance, Kawaguchi (1994) compared the suffix *-ette* (< lat. *-itta*) in both maps of ALF and *L'Atlas linguistique et ethnographique de la Champagne et de la Brie* (ALCB). As far as two familiar words *noisette* (ALF no. 919, ALCB no. 662) and *violette* (ALF no. 1401, ALCB no. 727) are concerned, he found a very weak correspondence, that is, about 20%, of the informants' answers; the total absence of a

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¹ Le Dû 1992 : 300 and Simoni-Aurembou 2004 : 2–6.

² Dalbera 2007 : 43–44.

variant [-at] in ALF was most astonishing. Kawaguchi postulates that such incoherence of correspondence between two linguistic atlases is due to polymorphism in ALF's informants; the informants seemed to choose dialectal [-at], [-ɔt], [-œt] or standard suffixes [-ɛt] according to circumstances, and some chose standard forms during Edmond's field research³. In spite of Edmond's epoch-making contribution to French dialectology, the answers registered in ALF's maps should be carefully treated, especially in the study of standardization of dialects.

Dalbera explains that dialectology in the third generation shows two trends of study making use of new techniques. The first trend is represented by the *Atlas Linguarum Europae* project, a challenge to unite the existing European linguistic atlases and create a comprehensive interpretation map of European languages and dialects. In the second trend, linguistic atlases will be computerized to analyze linguistic maps quantitatively and statistically. Thus, dialectology in the third generation does not newly produce a linguistic atlas, but develops new approaches to linguistic atlases. Our research belongs to this third generation.

2. *L'Atlas linguistique et ethnographique de la Champagne et de la Brie (ALCB)*

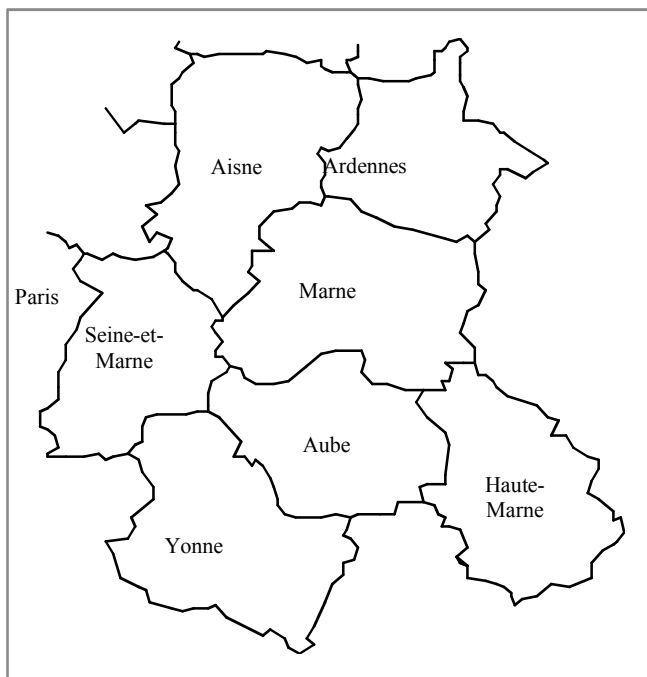


Fig. 1. Map of ALCB

Henri Bourcelot conducted a large-scale field research from October 1957 to September 1961. Most informants were 60–75-year-old farmers at the time of investigation. Consequently, the dialects described in ALCB are those used or heard

³ Kawaguchi 1994 : 410-415.

more than half a century ago among people aged over 60. *ALCB* has 194 points of investigation and contains 1,045 maps in three volumes. The western part of *ALCB* is located immediately east of Paris. The *ALCB* has been frequently quoted in dialect studies of neighboring areas such as Île-de-France and Picardie but there are few dialect studies of *ALCB* itself. Based on the abovementioned premise, we would like to discuss the main subject of our research. How can we depict standardization in *ALCB*? In the beginning, to examine the problem of standardization in *ALCB*, we will explain the process for construction of the *ALCB* database and its quantitative analysis.

First, selecting 80 maps⁴ out of 1,045, we calculated the occurrences of standard (ST) and dialect form (DL) for each map and at each point of investigation. To better understand this process, it would be important to demonstrate several specimens of our classification of ST and DL. In general, we are referring to two dictionaries of French pronunciation⁵ for the definition of ST. We will set certain latitude for some phonetic variations: between front [a] and back [ɑ] for *érable*, *javelle*, *marteau*, etc., [ŋ] and [ɲ] for *ornière*, variants of /r/ ([ʁ], [ʁ̥], [r], etc.) in several maps⁶, vowel length for *chêne*, *haie*, *ivraie*, and presence or absence of schwa [ə].

Examples of ST are [plɥi] for no. 30 Voilà LA PLUIE ‘rain’; [ɔʁɲɛ:ʁ/ ɔʁɲɛ:ʁ] for no. 220 DES ORNIÈRES ‘ruts’; [fɛɛzɔ̃/ fɛɛzɔ̃] for no. 337 (La) FENAISON ‘haymaking’; [maʁto/maʁto] for no. 349 (Le) MARTEAU ‘hammer’; [fʁɥi] for no. 628 (Beaucoup de) FRUITS ‘fruits’; [maʁgʁit/maʁgʁit] for no. 786 (Les) MARGUERITES ‘daisys’; [aʁmwaz/aʁmwaz] for no. 794 (L’) ARMOISE ‘wormwood’; [bʁɥjɛʁ] for no. 801 (La) BRUYÈRE ‘heather’ and so on.

On the other hand, we will group *brouillards*, *brouillons* in no. 21 DES NUAGES ‘clouds’ into DL, since they are lexically different and impossible to derive directly from *nuages*. Forms like [dɔ̃be], [dose], [ʒikle], and [ɔ̃le] in no. 34 UNE AVERSE ‘shower’ on the one hand, and [alego], [aleko], [alekwa], and [alakwɛ] in no. 37 (Se mettre) A L’ABRI (du vent et de la pluie) ‘to shelter from (wind and rain)’ on the other hand, have nothing to do with [avɛʁs] and [alabʁi] and should be classified as DL. Forms [eglise] and [klife] in no. 45 ÉCLABOUSSER ‘to splash’ and [ʁɑ̃p], [ʁɔ̃dlɔ̃t], and [jāʁ] in no. 818 (Le) LIERRE ‘ivy’ will be treated in the same way.

On the contrary, two forms [avaʁs] and [ɛvaʁs] in map no. 34 UNE AVERSE will be classified neither as ST nor as DL, because they do not represent ST itself, but could be interpreted as diatopic variants of ST with vowel alternation between [ɛ] and [a]. The pronunciation [alebʁi] in no. 37 (Se mettre) A L’ABRI (du vent et de la pluie)

⁴ 80 maps of *ALCB* are as follows: no. 11, 16, 20, 21, 22, 30, 34, 35, 37, 43, 44, 45, 50, 56, 57, 59, 76, 209, 213, 217, 220, 303, 315, 319, 325, 334, 335, 337, 349, 353, 357, 358, 361, 369, 370, 371, 372, 377, 382, 383, 384, 385, 390, 393, 405, 406, 413, 423, 424, 427, 431, 476, 550, 558, 559, 560, 562, 565, 568, 570, 596, 598, 628, 679, 703, 751, 786, 794, 796, 801, 818, 828, 895, 945, 948, 951, 953, 954, 957, 1009. In this paper, I modified all phonetic notations of *ALCB* into their possibly corresponding IPA symbols.

⁵ Martinet et Walter 1973 et Warnant 1987.

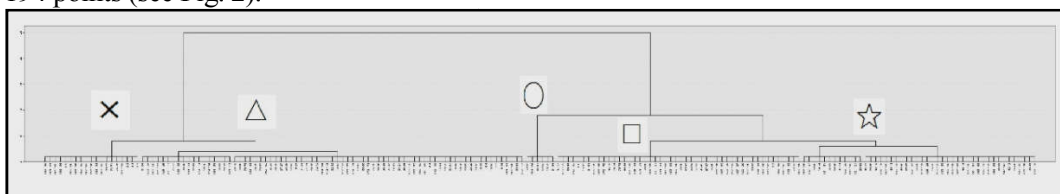
⁶ For the variation of /r/, see Bourcelot 1966, *ALCB*, vol. 1, p. VI.

must be regarded in the same manner. Forms [klɛʁte] in no. 56 LA CLARTÉ ‘light’ and [sã̃tʃe], [sã̃te] in no. 217 UN SENTIER ‘path’ are also attributed to ST variants. The same can be said about the following cases: [vɔ̃tʃy:ʁ], [waty:ʁ], and [wɛty:ʁ] in no. 372 (La) VOITURE ‘car,’ and [flayo], [fle], [fje], and [flo:] in no. 431 (Un) FLÉAU ‘flail.’ As our research will focus exclusively on standardization in ALCB, we will take into consideration the distribution of ST and DL⁷, ignoring therefore the distribution of ST variants. Counting the number of occurrences of ST and DL from point 1 to 194 on 80 different maps, we have obtained a matrix as shown in Table 1.

Table 1. ST and DL in 194 points on 80 maps of ALCB

Point	ST	DL	Point	ST	DL	Point	ST	DL	Point	ST	DL
1	3	37	6	10	25	11	7	27	190	0	30
2	2	36	7	15	20	12	8	20	191	1	27
3	3	35	8	12	20	192	1	29
4	8	25	9	3	30	188	1	29	193	3	26
5	9	24	10	10	25	189	2	29	194	2	29

To recognize a distributional relationship between ST and DL in ALCB, it is without doubt beyond our capacity to predict or foresee the relevance between 194 points and the observed forms in each point through 80 different maps. Multivariate analysis is the most appropriate method for grouping our highly complex data. In the present case, we will use cluster analysis to separate 194 points into meaningful groups⁸. Cluster analysis provides us the following dendrogram with five distinct groups. Using different symbols ×, Δ, ○, □, ☆ for each group, we have plotted them geographically on 194 points (see Fig. 2).



⁷ Blanks instead of linguistic forms in some points on maps no. 16, no. 334, no. 413, and no. 786, were excluded from our calculation.

⁸ Using Ward Method and Squared Euclidean distance in PASW Statistics18 release 18.0.0 (2009).

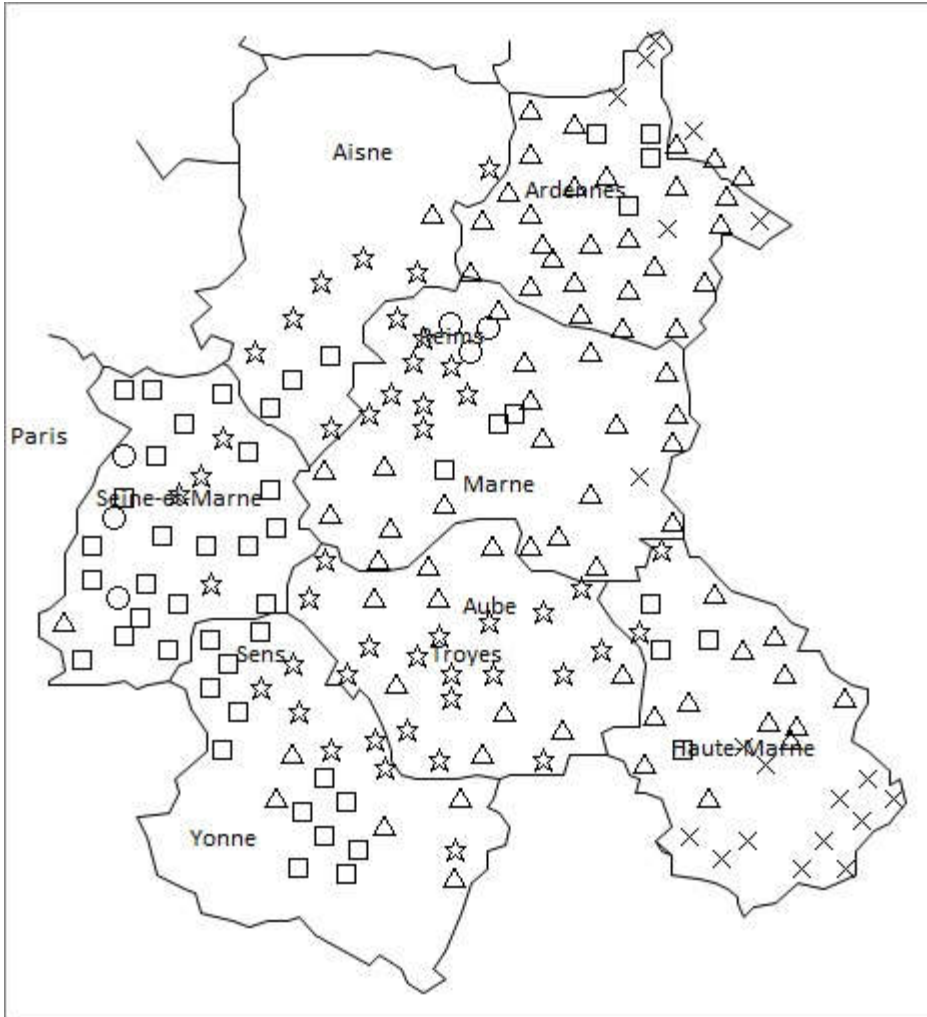


Fig. 2. Grouping of 194 points

	ST	DL
×	2.2	29.5
△	9.1	26.7
□	15.3	21.3
☆	20.0	25.2
○	35.8	15.5

Table 2
Five groups of 194 points

Each value represents the average number of maps per 80 maps.

The points marked by × are situated generally in two peripheral prefectures, Ardennes and Haute-Marne. At these points, around 30 maps out of 80 show DL (see the average of DL, 29.5 for × in Table 2). On the contrary, the symbol ○ represents the most standardized point: 35.8 standardized maps against 15.5 dialectalized ones. It is

significant that even in the midst of areas relatively less standardized, some standardized points can be found around local towns: Reims in Marne, Sens in Yonne, and Troyes in Aube (see the mark ☆ in Fig. 2). Finally, less standardized points with □ can be observed even in Seine-et-Marne, the prefecture neighboring Paris.

3. Spread of ST in ALCB

According to the cluster analysis result, we can consider as a general tendency that ST appears comparatively often in prefectures near Paris, and that the DL occurrence ratio becomes conversely higher in remote prefectures like Ardennes and Haute-Marne. Can we assert then that the ST appearance ratio decreases as we drift away from Paris? To testify the presence of such a general tendency, we measured the geographical distance of every point from Paris, and analyzed the correlation between the real distance and the number of ST occurrences⁹; the result is given in Fig. 3.

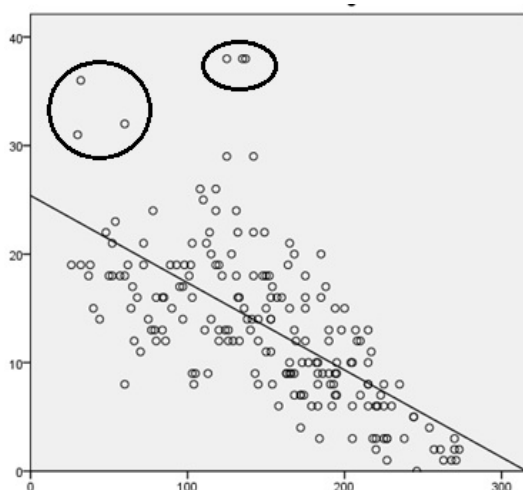


Fig. 3. Correlation between distance and ST

Vertical axis: number of occurrences of ST in 80 maps
 Horizontal axis: distance from Paris in kilometers
 ○ Observed value
 — Regression line

As Table 3 shows, 194 points of ALCB are located mostly within the range of 300 kms from Paris (see the average of distance). As the average of ST occurrences in 80 maps is very low, in most cases, we will observe variants of ST or DL on the maps under investigation.

Table 3. Correlation between distance and ST

	Average	SD	N
Distance	150.15	59.62	194
Occurrences of ST in 80 maps	13.35	7.36	194

The horizontal axis of Fig. 3 indicates the geographical distance from Paris in kilometers, and stays away from Paris as it progresses right from the left end. The

⁹ For a similar analysis applied to Île-de-France dialects, see Kawaguchi 2007.

number of maps with ST decreases in the vertical axis as the distance from Paris increases gradually from left to right. The correlation between ST occurrences and the distance from Paris here is negative. Its correlation coefficient is strong enough to be significant below 1%: Pearson $r = -0.66$.

Nevertheless, taking into account the regression line, it would be better to express some reservations about this general tendency, because some encircled points show clear deviation from the regression line and they are all situated at a distance of less than 50 km or around 150 km from Paris. As remarked in the end of the previous section, these points correspond to those in Seine-et-Marne close to the capital of France. The same preference for non-standard suffix in this prefecture was mentioned in Kawaguchi (1994; pp. 418 and 429). In the foreword of ALCB, Bourcelot confessed a kind of difficulty in finding valuable witnesses particularly in Seine-et-Marne¹⁰. The reason non-standard forms are registered in this prefecture must be studied further.

Does the number of DL increase in proportion to the distance from Paris? The calculation of such correlation provides the result presented in Fig. 4. Diametrically opposing the above negative correlation, there is a strong positive correlation between the distance from Paris and the number of DL. It is also significant below 1%: $r = 0.51$.

Table 4. Correlation between distance and DL

	Average	SD	N
Distance	150.05	59.62	194
Occurrences of DL in 80 maps	24.96	4.00	194

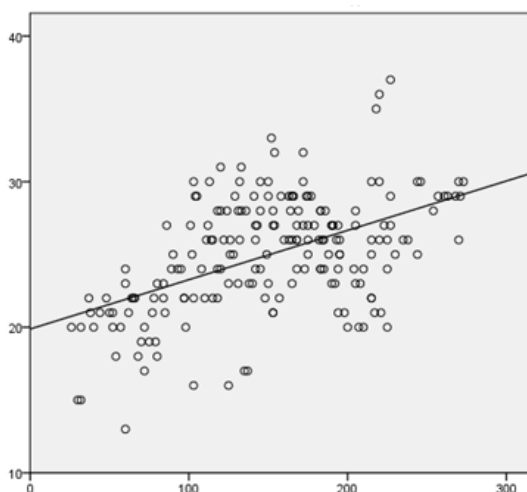


Fig. 4. Correlation between distance and DL

Vertical axis: number of occurrences of DL in 80 maps

Horizontal axis: distance from Paris in kilometers

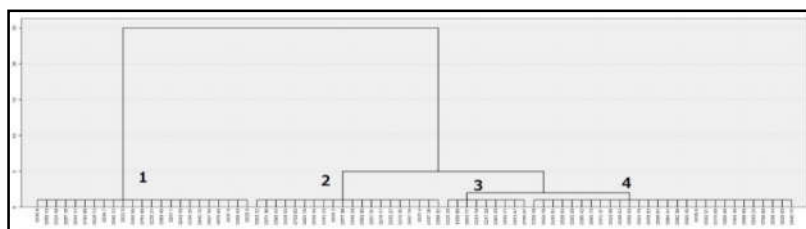
○ Observed value
— Regression line

¹⁰ “[...] Il fut parfois nécessaire dans le département de la Seine-et-Marne de visiter toutes les agglomérations d’un même canton pour trouver quelques témoins valables. L’enquête se faisait alors là comme ailleurs, oralement, soit dans les maisons, les dépendances ou les champs de mes interlocuteurs” (Bourcelot 1966).

In summary, the distribution of ST near Paris and DL in distant prefectures is not contrary to our intuition and seems to reflect a natural tendency of French dialects. However, what about the points marked by Δ and \square in Fig. 2? From a simple distributional viewpoint, we may insist that Δ is more or less dominant in the prefectures of Ardennes, Marne, and Haute-Marne, while \square is dominant in Aisne, Seine-et-Marne, and Yonne. Even though such an explanation was generally admitted, it would be extremely difficult to push a further investigation elucidating some possible factors of such distribution of Δ and \square resulting from cluster analysis. This kind of difficulty manifests the fact that each point has its own geographical and linguistic status independent of the abovementioned natural tendency and the map chosen, so we cannot precisely predict the individual characteristics of each point through data based exclusively on word maps. In other words, it stands to reason that each point of ALCB has its own history.

4. From the viewpoint of 80 maps

After depicting general tendencies of 194 points of ALCB, some specific features of the 80 maps will be briefly examined in this section. Exploiting a similar cluster analysis from the previous investigation, we will try to classify 80 maps into meaningful groups¹¹. As a result, 80 maps form four groups in the following dendrogram.



The first group containing 23 maps is distinguished by the predominance of DL and the scarce appearance of ST. In every map, more than 130 points demonstrate DL, as shown in Table 5.

Table 5. The first group (23 maps)

No.	Title	Word category	ST	DL
11	LE VENT DU NORD	Le temps M	13	139
20	LE CIEL SE COUVRE	Le temps M	29	164
22	DES GROS NUAGES	Le temps M	13	181
34	UNE AVERSE	Le temps M	7	176
35	(Il pleut) A VERSE	Le temps M	0	189
37	(Se mettre) A L'ABRI (du vent et de la pluie)	Le temps M	9	160
43	LA BOUE	Le temps M	9	133
44	ON ENFONCE DANS LA BOUE	Le temps M	5	180
45	ECLABOUSSER	Le temps M	0	175

¹¹ Ward Method and Squared Euclidean distance, using PASW Statistics18 release 18.0.0 (2009).

50	IL BRUINE	Le temps M	0	189
57	SÉCHER SUPERFICIELLEMENT	Le temps M	0	194
220	DES ORNIÈRES	La terre T	18	134
334	(L') IVRAIE	Les plantes domestiques F	9	149
383	(Du) BLÉ	Les plantes domestiques C	16	131
390	(Des) COQUELICOTS	Les plantes domestiques C	13	166
424	(La) BALLE (des céréales)	Les plantes domestiques C	0	191
427	(Le) CRIBLE	Les plantes domestiques C	1	154
560	(Le) HÊTRE	Les plantes domestiques B	1	134
679	(Les) COURGES	Les plantes domestiques L	0	154
751	(L') AUBÉPINE	Les plantes sauvages	0	131
794	(L') ARMOISE	Les plantes sauvages	2	181
828	(La) COLCHIQUE	Les plantes sauvages	0	184
945	(Le) BABEURRE	Les animaux domestiques E	18	149

B = Les plantes à bois, C = Les céréales, E = l'élevage, F = les plantes fourragères, L = Les légumes,

M = La météorologie, T = La terre cultivée

Eleven out of 23 maps in this group appertain to the word category¹² 'weather and meteorology (Le temps La météorologie)' meaning that, although informants of *ALCB* had other choices than ST at their disposal to express these meteorological phenomena, in most cases they chose DL. We can also say that the maps in question show an extended polymorphism or polylexicalism.

Let us see some specimens: (*vent*) *du haut* for no. 11 LE VENT DU NORD 'north wind'; *le temps se barbouille, se brouille, se chamaille, or se charge* for no. 20 LE CIEL SE COUVRE 'to become cloudy'; *brouillons, chameaux, or gros brouillards* for no. 22 DES GROS NUAGES 'big clouds'; [abuj], [abutɛj], or [afädɛl] for no. 34 UNE AVERSE; [akwa], [alego], [aleko], [alakwa], or [okwa] for no. 37 (*se mettre*) A L'ABRI (du vent et de la pluie); [bɔrb], [burb], [buli:], or *gadouille* for no. 43 LA BOUE 'mud'; [ɛglifɛ], [ɛglise], [ʒigle], or [klifɛ] for no. 45 ÉCLABOUSSER; [ɛbru:jas], [i bru:j], [i brusin], [i brujas], or [i muzin] for no. 50 IL BRUINE 'it's drizzling'; [rɛsɥɛ], [resyɛ], [resɥɛ], or [resɥie] for no. 57 SÉCHER SUPERFICIELLEMENT 'to dry superficially.'

The second group in Table 6, in which ST is clearly dominant, contains 20 maps. The most salient word category is here 'domestic plants for fodder (Les plantes domestiques Les plantes fourragères),' which includes not only plants but also instruments and actions for making fodder. In short, to describe these words concerning fodder or fodder-making, informants of *ALCB* do not use DL, but obey the norm of French, choosing ST.

¹² These categories also represent three different volumes of *ALCB*: Volume I - Le temps - La terre, Volume II - Les plantes domestiques, Volume III - Les plantes sauvages - Les animaux domestiques.

Table 6. The second group (20 maps)

No.	Title	Word category	ST	DL
16	LE VENT DU NORD-OUEST	Le temps M	69	13
21	DES NUAGES	Le temps M	127	67
59	LE SOLEIL	Le temps M	67	0
76	DES FLOCONS de neige	Le temps M	159	35
303	SEMER; LE SEMOIR	La terre T	90	7
315	L'EAU	La terre H	71	4
335	(Le) CHIENDENT	Les plantes domestiques F	77	43
337	(La) FENAISON	Les plantes domestiques F	109	75
349	(Le) MARTEAU	Les plantes domestiques F	60	14
353	(L') «ANDAIN»	Les plantes domestiques F	142	9
357	FANER	Les plantes domestiques F	142	1
358	(Une) FOURCHE	Les plantes domestiques F	107	46
370	IL VA CHERCHER (le foin)	Les plantes domestiques F	63	31
371	CHARGER	Les plantes domestiques F	85	4
377	(Du) REGAIN	Les plantes domestiques F	76	18
393	(Les) CHARDONS	Les plantes domestiques C	80	0
559	(Le) FRÊNE	Les plantes domestiques B	62	0
703	(Une) HAIE	Les plantes sauvages	60	0
801	(La) BRUYÈRE	Les plantes sauvages	61	3
957	(La) PRÉSURE	Les animaux domestiques E	65	62

B = Les plantes à bois, C = Les céréales, E = l'élevage, F = Les plantes fourragères, H = La terre habitée,

M = La météorologie, T = La terre cultivée

The third group is composed of only nine maps. It does not show any prominent categorical characteristics, and holds four word categories in a similar proportion. As far as the distribution of ST and DL is concerned, there is a large number of DL in comparison with ST.

Table 7. The third group (9 maps)

No.	Title	Word category	ST	DL
213	UN CHEMIN COMMUNAL	La terre C	17	29
217	UN SENTIER	La terre C	10	42
325	(Le) TRÈFLE RAMPANT	Les plantes domestiques F	1	70
361	(Le) RATEAU	Les plantes domestiques F	2	53
413	GLANER	Les plantes domestiques C	16	56
786	(Les) MARGUERITES	Les plantes sauvages	23	57

818	(Le) LIERRE	Les plantes sauvages	0	56
953	(Le) BÉLIER	Les animaux domestiques E	12	77
1009	(Une) OIE	Les animaux domestiques E	4	77

B = Les plantes à bois, C = Les céréales, E = l'élevage, F = les plantes fourragères, H = La terre habitée,

M = La météorologie, T = La terre cultivée

Three word categories cover 19 maps out of 28 in the fourth group. These three categories are, respectively, 'domestic plants and cereals (Les plantes domestiques Les céréales)', 'domestic plants and wood plants (Les plantes domestiques Les plantes à bois)', and 'domestic animals (Les animaux domestiques)'. Both ST and DL are infrequent here, so in most cases, we will see the emergence of ST variants. Let us observe several specimens of ST variants extracted from the fourth group. In the category of "domestic plants" [mwesð], [mwɛsð], [mwəsð^ā], [mɛfð], or [mɔfð] for no. 382 (La) MOISSON 'harvest'; [se:gl], [se:g], [swal], [swɛl], [sɛl], [se:ɔʒ], [se:j], or even [so:l] for no. 384 (Le) SEIGLE 'rye'; [ʒave:l], [ʒɛvɛl], [ʒavœl], [ʒevɛl], or [ɔʒɛvel] for no. 405 (Les) JAVELLES 'swath'; [ʒarb], [ʒe:rb], or [ɔʒe:rb] for no. 406 (Une) GERBE 'sheaf', etc.

Table 8. The fourth group (28 maps)

No.	Title	Word category	ST	DL
30	Voilà LA PLUIE	Le temps M	22	0
56	LA CLARTÉ	Le temps M	44	0
209	UN RUISSEAU	La terre R	0	7
319	(L') HERBE	Les plantes domestiques F	48	4
369	(Une) MEULE DE FOIN	Les plantes domestiques F	36	18
372	(La) VOITURE	Les plantes domestiques F	8	0
382	(La) MOISSON	Les plantes domestiques C	32	9
384	(Le) SEIGLE	Les plantes domestiques C	13	16
385	(L') AVOINE	Les plantes domestiques C	12	0
405	(Les) JAVELLES	Les plantes domestiques C	32	5
406	(Une) GERBE	Les plantes domestiques C	26	2
423	CHOISIR	Les plantes domestiques C	5	1
431	(Un) FLÉAU	Les plantes domestiques C	1	15
476	(Le) PLANTOIR	Les plantes domestiques V	19	11
550	(Un) ARBRE	Les plantes domestiques B	0	0
558	(L') ÉRABLE	Les plantes domestiques B	10	5
562	(Le) CHÊNE	Les plantes domestiques B	23	0
565	(Le) TREMBLE	Les plantes domestiques B	8	3
568	(Le) SAULE BLANC	Les plantes domestiques B	44	24

570	(Le) BOULEAU	Les plantes domestiques B	19	0
596	(La) SERPE	Les plantes domestiques B	24	15
598	(Un) BUISSON	Les plantes domestiques B	4	0
628	(Beaucoup de) FRUITS	Les plantes domestiques Fr	41	1
796	(Le) PISSENLIT	Les plantes sauvages	45	4
895	(un) CHEVAL	Les animaux domestiques E	10	0
948	(Le) FROMAGE	Les animaux domestiques E	37	2
951	(Une) BREBIS	Les animaux domestiques E	0	4
954	(Un) AGNEAU	Les animaux domestiques E	0	9

B = Les plantes à bois, C = Les céréales, E = l'élevage, F = les plantes fourragères, Fr = les plantes à fruits,

M = La météorologie, R = Le relief, V = La vigne

In the category of “domestic wood plants,” [a:br], [o:br], [a:b], [a:p], or [o:p] for no. 550 (Un) ARBRE ‘tree’; [ɛrab], [ɛra:b], [ɛrap], [ɛro:b], [ɛrœ:b], or [ɛral] for no. 558 (L’) ÉRABLE ‘maple’; [ʃa:n] or [tʃɛn] for no. 562 (Le) CHÊNE ‘oak’; [buli], [bu:l], [bul], [bujo], [bule], or [bu:l] for no. 570 (Le) BOULEAU ‘birch’; [sarp], [serp], [so:rp] for no. 596 (La) SERPE ‘billhook’; [byɕð], [bysð], [boɕe:], [byɕð^a], and [bisð] for no. 598 (un) BUISSON ‘bush.’ Finally, for “domestic animals,” [ʃfo:], [ʃfal], [ʃwal], [tʃfo:], and [tjɛvo:] for no. 895 (un) CHEVAL ‘horse’; [frɔmɛʒ], [frœmɛʒ], [frumaʒ], [frumɛʒ], [frumɑʒ], and [fro^umatʃ] for no. 948 (Le) FROMAGE ‘cheese’; [bɛrbi], [bœrbi], [brebi], [barbi], [borb], and [bœrbe^a] for no. 951 (Une) BREBIS ‘ewe’; [aɲa], [aɲe], [ano], [aɲɔ], [ɛɲo], [ɛɲo], and [ɛɲe:] for no. 954 (Un) AGNEAU ‘lamb.’

As seen above, the 80 maps are divided into four groups. In case of plants used for fodder and fodder-making actions, ST is predominant over DL in many maps. On the contrary, when informants depict weather phenomena, they use DL in most maps analyzed in this research. Finally, to give words to domestic wood plants or animals, informants will choose neither ST nor DL, but variants of ST. From these constataions, specific word categories can be presumed to be the reason informants are making frequent use of ST or DL. Nevertheless, such word categories do not have enough explanatory power, but will only point out a mere tendency.

5. Conclusion

The analysis of 80 ALCB maps shows that DL increases and ST decreases in proportion to distance from Paris. This can be interpreted as a natural tendency of French dialects but it is important that ST can be attested in the circumferential region of local towns like Reims in Marne, Sens in Yonne, and Troyes in Aube prefectures. Generally speaking, in points close to Paris, ST becomes dominant, while DL prevails in points situated in the most remote prefectures, Ardennes and Haute-Marne. Apart from this natural trend, there are points where ST is relatively

rare or DL is observed in a relatively large number. Moreover, there are many DLs in several points of Seine-et-Marne, the prefecture neighboring Paris. It appears almost impossible for us to expound further potential factors that could cause such distribution of ST and DL; this would be an interminable topic for future dialectological research. From the viewpoint of 80 different ALCB maps, a certain relationship seems to exist between the frequency of ST and DL and the word category. DL prevails when the word concerns weather phenomenon but ST is predominant in domestic fodder plants and fodder-making actions; ST variants are dominant in domestic wood and animals. However, as mentioned about the 194 points and ST and DL frequencies, the relevance of word category and ST and DL frequency too does not seem to have a strong explanatory power, but only shows a conceivable tendency.

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Abstract

It was Jean-Philippe Dalbera that regarded the publication of *Atlas linguistique de la France* (ALF) as dialectology in the first generation and that the research for *Atlas linguistique de la France par régions* as dialectology in the second generation. In our present research considered as dialectology in the third generation, linguistic atlases will be computerized to analyze linguistic maps quantitatively and statistically.

For *Atlas linguistique et ethnographique de la Champagne et de la Brie* (ALCB), Henri Bourcelot conducted a large-scale field research from October 1957 to September 1961. The dialects described in *ALCB* are those used or heard more than half a century ago. The *ALCB* has been frequently quoted in dialect studies of neighboring areas such as Ile-de-France and Picardie but there are few dialect studies of *ALCB* itself. Based on the above mentioned premise, the present article will try to depict standardization in *ALCB*.

Selecting 80 maps out of 1,045 maps, we calculated the occurrences of standard (ST) and dialect form (DL) for each map and at each point of investigation. In our classification of ST or DL form, we are referring to two dictionaries of French pronunciation for the definition of ST. We will set certain latitude for some phonetic variations: between front [a] and back [ɑ] for *érable*, *javelle*, *marteau*, etc., [nj] and [ɲ] for *ornière*, variants of /t/ ([ʈ], [ʧ], [r], etc.) in several maps, vowel length for *chêne*, *haie*, *ivraie*, and presence or absence of schwa [ə].

Analyzing 80 *ALCB* maps, DL increases and ST decreases in proportion to distance from Paris. This can be interpreted as a natural tendency of French dialects. It is however important that ST can be attested in the circumferential region of local towns like Reims in Marne, Sens in Yonne, and Troyes in Aube prefectures. Generally speaking, in points close to Paris, ST becomes dominant, while DL prevails in points located in the most remote prefectures, Ardennes and Haute-Marne. Apart from this natural tendency, there are points where ST is relatively rare or DL is observed in a relatively large number. In addition, there are many DLs in several points of Seine-et-Marne near Paris. In the end, it appears almost impossible for us to expound further potential factors that could cause such distribution of ST and DL. However, this would be an everlasting topic for past and future dialectological research.

From the viewpoint of 80 different maps, a certain relationship possibly exists between the frequency of ST and DL and the word category. DL prevails when the word concerns weather phenomenon but ST is predominant in domestic fodder plants and fodder-making actions. ST variants are dominant in domestic wood and animals. However, the relevance of word category and ST and DL frequency does not appear to have a strong explanatory power, but only shows a conceivable tendency.