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The Status of 'h aspire' in French Today

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1 Two types of h initial words in French

There are two categories of words beginning with h in French; words beginning with mute h and words beginning with the so-called aspirated h usually refered to as *h aspiré* in the literature. Learners of French are usually told that the existence of the two classes is due to the origin of the words. Mute h words are believed to come from Latin while *h aspiré* words are traditionally attributed to Germanic languages where h was and still is aspirated. While this explanation is usually sufficient for students of French, the situation is not that simple.

Some Latinate words have *h aspiré*. For example, *haut* ('high') comes from the Latin *altus* which has no h, and yet *haut* begins with an *h aspiré*. Furthermore, there are words which have an *h aspiré* in one form but a mute h in related forms. For instance, the word *héros* ('hero') begins with an *h aspiré*, but its feminine counterpart *héroïne* ('heroine') as well as other derived forms, begin with a mute h. Some grammarians such as Grévisse have suggested that the *h aspiré* was inserted so as to avoid homophony with *zéro* ('zero') in the plural. The same argument would be valid in the case of *haut*. By inserting an *h aspiré*, homophony with *eau* ('water') is avoided in the singular and plural.

In most dialects of French, *h aspiré* has no phonetic realization.[1] It apparently lost its aspiration by the 16th century. This loss of aspiration resulted in the lack of phonetic distinction between mute h words and *h aspiré* words. They both begin with a vowel. However, a difference exists on the phonological level.

1.1 A phonological reality

The difference between mute h and *h aspiré* words is found in the application or non-application of some phonological processes. These processes are grouped under the cover term Sandhi phenomena and include elision, liaison and suppletion. In all three processes, two words are adjacent and the first word is affected and transformed when the second word begins with a vowel. Although both types of h initial words begin phonetically with a vowel, sandhi processes apply to mute h words but are blocked in the case of *h aspiré* words. This fact has led some phonologists to conclude that the underlying representation of *h aspiré* words contain an empty consonantal slot.

1.1.1 Elision

As is shown in Table 1, elision is a process whereby the final vowel of a personal pronoun, an article, a preposition or an adverb deletes when the following word begins with a vowel. Elision is blocked when the second word begins with a consonant.

[1] Some dialects of Canada and Eastern France have some aspiration in *h aspiré* words.

In the case of h initial words, elision takes place with mute h words but not with *h aspiré* words.

	vowel and mute h	consonant and *h aspiré*
pronouns *(je, me, te, le)*	j'aime j'habite	je déteste je hais
definite article *(le)*	l'ami l'homme	le professeur le héros
preposition *(de)*	d'amour d'homme	de professeur de héros
adverb of negation *(ne)*	n'aime pas n'habite pas	ne déteste pas ne hais pas

Table 1. Elision

1.1.2 Liaison

Liaison is a process in which a latent final consonant surfaces if the following word begins with a vowel, and if the two words are syntactically close. For purposes of simplicity, this study discusses only obligatory liaison.[2] Just as in elision, in the case of words beginning with h, liaison applies with mute h words but not with *h aspiré* words as is shown with the examples in Table 2.

	vowels and mute h	consonants and *h aspiré*
liaison in /z/	les **Z**amis les **Z**hommes	les parents les héros
liaison in /n/	un **N**ami un **N**homme	un parent un héros
liaison in /t/	un petit **T**ami un petit **T**homme	un petit parent un petit héros
liaison in /r/	le dernier **R**ami le dernier **R**homme	le dernier parent le dernier héros

Table 2. Liaison

[2]Liaison can be obligatory or optional. Liaison is constrained by the syntax. The application in optional environments is subject to sociolinguistic variation (geographic, stylistic, etc...)

1.1.3 Suppletion

In suppletion, the first of two adjacent and syntactically close words changes when the second word begins with a vowel. Again, this process is found with mute h words but not with *h aspiré* words, so you have *cet homme* but *ce héros*. Suppletion is a fairly rare process because it only applies to the demonstrative adjective in the singular masculine, the singular feminine possessive adjectives in the 1st, 2nd and 3rd person and to a handful of adjectives, as illustrated in Table 3.

	vowel and mute h	consonant and *h aspiré*
demonstrative adjective (masc. sing. *cet* vs *ce*)	cet ami cet homme	ce parent ce héros
possessive adjectives (fem. sing. *mon, son, ton*)	mon armée mon herbe	ma guitare ma harpe
adjectives (*bel* vs *beau*)	un bel été un bel homme	un beau parent un beau héros

Table 3. Suppletion

2 Goals of the Study

Although there is no phonetic difference between mute h words and *h aspiré* words, a difference is found in elision, liaison and suppletion contexts. In fact, it is only by looking at these contexts that it can be observed whether a distinction exists for a speaker.)

Grammarians have long reported that sometimes the difference is not maintained and some *h aspiré* words behave exactly like mute h words in the application of liaison, elision and suppletion (Nyrop 1904, Martinet 1933, and Cohen 1963). This weakening of *h aspiré* was merely noted and most often condemned as being a characteristic of uneducated speech. *H aspiré* has been known to be particularly weak in proper names, and variation is often found within one speaker or author (Grévisse 1994). For that reason, my study is limited to open class items and specifically to nouns and verbs.

I look at people's production of *h aspiré* words in all three contexts (elision, liaison and suppletion) where differences from mute h words might be found. My goal is to see if the weakening of *h aspiré* applies in only certain words and whether some of the sandhi phenomena favor the weakening more than others. I also observe if the weakening of *h aspiré* is socially stratified. Finally, I investigate people's acceptability judgments of the application of sandhi phenomena to *h aspiré* words and compare them to their production of *h aspiré* words.

3 The Experiment

Many of the *h aspiré* words in French are low frequency words. For that reason, collecting a sufficient amount of tokens for analysis is possible through the formal elicitation developed by William Labov. The interviews consisted of five tasks. Some of the words

recurred in different tasks. I restricted my study to 20 words altogether in order to collect enough tokens of each word.

The first task was a list of words which participants were asked to read twice; the first time in their singular form, testing possible liaison with /n/, and the second time in the plural, testing liaison with /z/. The word list is included in the appendix.

The second task was to complete sentence blanks which are also given in the appendix. In this task most of the tokens were placed in the liaison context with /z/.

The third task was a semantic differential task. People were asked to explain the difference between pairs of semantically close words. This task is the most casual of the five. It is also the only task where *h aspiré* words could be found in several liaison and elision contexts since people speak spontaneously.

In the fourth task, participants were asked to make sentences using elements from three columns. The first column contains subjects, the second, verbs which take the preposition *de* and the third column contains verb phrases which sometimes begin with an *h aspiré* verb. This task specifically tests elision of the preposition *de*. Finally, participants were asked to rate the acceptability of 12 sentences which contained liaison, elision and suppletion with *h aspiré* words.

4 The Informants

Table 4 shows the 18 speakers from whom data were collected. They are evenly split by sex with nine men and nine women. The women represent a wider age range than the men (from 12 to 85 years of age for women and 20 to 65 for men). They are also evenly distributed in terms of social class, with six informants belonging to the lower class (l), six to the middle class (m) and six to the upper class (u). Education is the criterion used in determining the informants' social class categories. People whose education ended in high-school were rated lower-class, people with a college education of up to four years were rated middle-class, and people with more than four years of college education were rated as upper-class. For the youngest informant, I used her parents' education level.

Speaker	Age	Social class	Speaker	Age	Social class
Lucie	12	U	Roméo	20	U
Céline	23	L	*Michel*	24	U
Renée	24	M	*Armand*	27	U
Valérie	27	M	Daniel	28	L
Irène	30	L	Hervé	31	M
Marine	42	L	Christian	35	M
Monique	45	U	Patrick	45	U
Marianne	53	M	Jérôme	58	L
Aline	85	L	*Mohamed*	65	M

Table 4. The informants

Three of the informants are from francophone countries other than France. They are indicated by italics. Michel is Canadian, Armand was raised in Switzerland and moved to Philadelphia at the age of 23, and Mohamed lived in Algeria until the age of 35 and now

lives in France. Although the other languages spoken in these biilingual countries have a truly aspirated h,[3] the three speakers show no phonetic realization of *h aspiré* in French.

5 Coding

For the first four tasks, the results generally fall in two categories: either sandhi applies or it does not. There are, however, instances where the informants corrected themselves. Correction was found in both direction; i.e, the speaker would either first apply sandhi and then correct their utterance by removing the elision or liaison, or they would not do liaison or elision and then correct themselves by applying sandhi. Although there were few such cases (less than 1% of the tokens), these occurences were coded as corrections. I also assigned a code when speakers showed clear hesitation, but hesitation was also limited to 1% of the tokens. Ultimately these tokens were excluded from the analysis.
For the subjective reaction test, the participants could choose from 4 ratings – incomprehensible (1), comprehensible after mental rephrasing (2), comprehensible but odd (3) or acceptable (4).

6 Results of Production

6.1 Speakers

As Figure 1 (over) shows, *h aspiré* is still very much active among these informants. Except for Daniel who applies sandhi to *h aspiré* words 49% of the time, the other informants never exceed 25% of sandhi application. In fact two thirds of the speakers apply sandhi less than 10% of the time. Two informants show no application of sandhi at all.

6.2 Gender

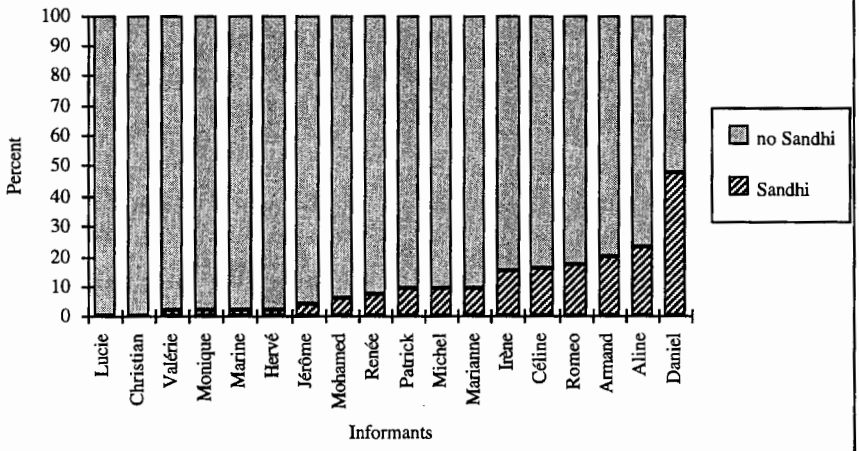
Table 5 shows that there is no difference between men and women. They apply sandhi to *h aspiré* words at similar rates.

	no sandhi	sandhi	Total
women N	295	38	333
	89%	11%	
men N	299	54	353
	85%	15%	

Table 5. Application of Sandhi by gender

[3]English for Canada, German for Switzerland and Arabic for Algeria.

Figure 1. Overall behavior of informants: Sandhi application with *h aspiré*



The varbrul binomial analysis further shows that gender is not a significant factor for *h aspiré*.

	Factor weight	App/Total	Input&Weight
Male	0.508	0.17[4]	0.04
Female	0.491	0.13	0.04

6.3 Social class

As Table 6 shows, the percentage of application of sandhi is higher for the lower class than for the middle and upper classes. 24% for the lower class and respectively 6% and 13% for the middle and upper classes. This result nicely confirms what grammarians had offered as anecdotal evidence.

[4]The discrepancy between the 15% given above and this 17% is due to the elimination of invariant tokens (knockouts) in the binomial analysis.

Social Class	No sandhi		Sandhi		Total
	N	%	N	%	N
Lower	133	74	47	24	180
Middle	198	94	16	6	227
Upper	263	87	29	13	279
Grand total					686

Table 6. Sandhi application by social class

Varbrul also reveals some significance in the social class category. Indeed, the lower class has a substantially higher factor weight indicating that class membership carries more weight in triggering sandhi than the middle and upper classes which have a much lower factor weight.

	Factor Weight	App/Total	Input&Weight
Lower class	0.712	0.21[5]	0.15
Middle class	0.266	0.06	0.02
Upper class	0.514	0.13	0.07

Perhaps more interesting are the results of the middle class. The middle class is more conservative than the upper class. It allows for less sandhi application. This crossover pattern is not uncommon and was found by Labov in his department store study of /r/ in New York city. But the behavior of the middle class has never been noticed nor documented for *h aspiré* in French.

6.4 Words

From the 20 *h aspiré* words under study, *handicapé* clearly stands out as an anomaly. As Figure 2 shows, *handicapé* allows the application of sandhi more often than it blocks it. In other words, *handicapé* behaves more like a mute h word, and this is true in both /n/ and /z/ liaison environments as Figures 3 and 4 show. *Handicapé* is not particularly a high frequency word but what distinguishes it from the rest of the words is that it has been morphologically integrated into French. This might explain why it has crossed over whereas words like *hamburger* or *hamster* have not.

Six of the 20 words show no variation at all: *hasard, hauteur, héron, honteux, héros* and *huche*. They block sandhi processes 100% of the time. The remaining 13 words allow sandhi processes to apply, but only very little.

[5]The percentage of application is lower in the varbrul results than in table 2, because all invariable tokens had to be excluded in the varbrul analysis.

Figure 2: Sandhi application in words

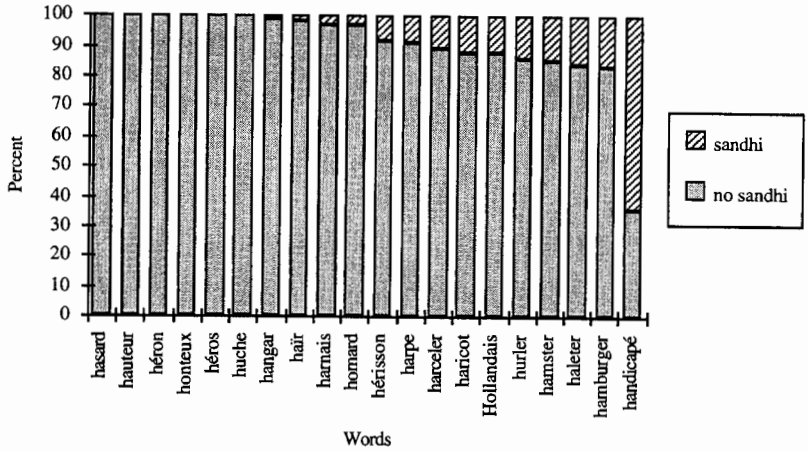


Figure 3: Behavior in liaison context with /n/

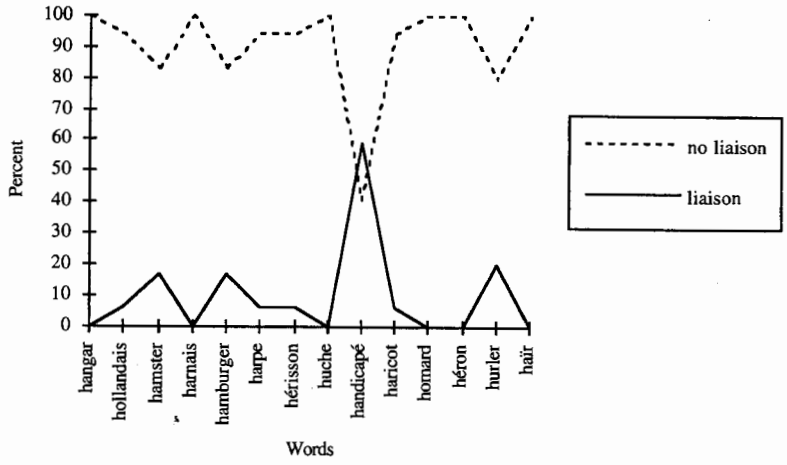
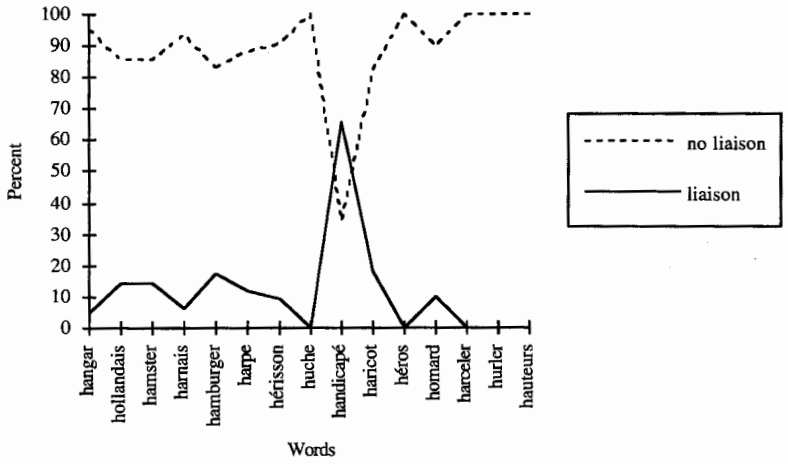


Figure 4: Behavior in liaison context with /z/



For the 14 words which show some variation, the varbrul analysis shows that*handicapé* and *haleter* receive the highest factor weights while *hangar* and *harnais* receive very low factor weight.

Words	**Factor Weight**	**App/Total**	**Input&Weight**
hangar	*0.051*	*0.01*	*0.00*
Hollandais	0.448	0.13	0.03
hamster	0.509	0.17	0.04
harnais	*0.064*	*0.03*	*0.00*
hamburger	0.486	0.19	0.04
harpe	0.249	0.10	0.01
hérisson	0.280	0.09	0.02
handicapé	**0.978**	**0.71**	**0.64**
haricot	0.746	0.12	0.11
homard	0.329	0.03	0.02
haleter	**0.922**	**0.18**	**0.32**
hurler	0.871	0.15	0.21
haïr	0.367	0.03	0.02
harceler	0.874	0.12	0.22

6.5 Environment

In the production part of the experiment, I collected very few tokens in the /t/ liaison context and in the suppletion context. For the other three environments Table 7 shows that the application of sandhi is more prevalent in the liaison context with /z/ than with /n/ (17% for /z/, 8% for /n/). And elision is the environment in which sandhi applies the least, a mere 5%.

Environment	Sandhi N	Sanhi %	No sandhi N	No sandhi%
liaison in /n/	22	8	252	92
liaison in /z/	59	17	297	83
elision	11	5	205	95

Table 7. Sandhi by environment

The varbrul analysis confirms that liaison in /z/ is the most likely environment to trigger Sandhi since it receives a distinctively heavier factor weight than the other two environments.

Environment	Factor Weight	App/Total	Input&Weight
liaison in N	0.339	0.10	0.02
liaison in Z	**0.681**	**0.22**	**0.08**
elision	0.388	0.08	0.02

6.6 The Tasks

The results by tasks given in Table 8 are interesting. The reading task was certainly the task where attention was the most focused on speech and yet, out of the four production tasks, it receives a fairly high percentage of sandhi; the second highest with 16%. In the sentence blanks where more attention is focused on semantics than on pronunciation, there is only 17% sandhi application. Very curiously, the semantic differential task, which is certainly the most casual task, triggers the lowest percentage of sandhi with only 5%. This is exactly the contrary of what one might have expected since less attention is paid to speech in a task like the semantic differential. It is true that people relied on written material when they read the pair of words on the card but they then went on speaking with no influence from the spelling whereas the other three tasks were based on written material. So, very curiously, it seems that looking at the spelling favors the application of sandhi although it is apparent to the reader that the words have an initial consonant.

Tasks	Sandhi N	Sandhi %	No sandhi N	No sandhi %	Total
Reading list	49	16	267	86	316
Sentence blanks	20	17	99	83	119
Semantic differentials	14	5	267	95	281
Sentences	9	7	124	93	133

Table 8. Sandhi by task

The varbrul analysis results confirm that the word list task is the most likely to trigger sandhi since it receives a significantly higher factor weight than the other three tasks. Interestingly, the factor weight for the semantic differential is neither low nor high, so it is not a particularly disfavoring factor in sandhi application.

Tasks	Factor Weight	App/Total	Input&Weight
Reading list	**0.712**	**0.20**	**0.09**
Sentence blanks	0.322	0.29	0.02
Sentences	0.254	0.09	0.01
Semantic Differ	0.422	0.07	0.03

7 Perception

The acceptability results laid out in Table 9 are also quite interesting. The 12 sentences were submitted to the 18 informants and could receive a ranking from 1 to 4; 1 when the sentence was not understood and 4 when the listener felt there was no problem with it. In other words the higher the acceptibility score the more acceptable the sentence is. A sentence which is considered acceptable by all 18 listeners received a score of 72 (18x4) and a sentence which was incomprehensible for all listeners received a score of 18 (18x1).

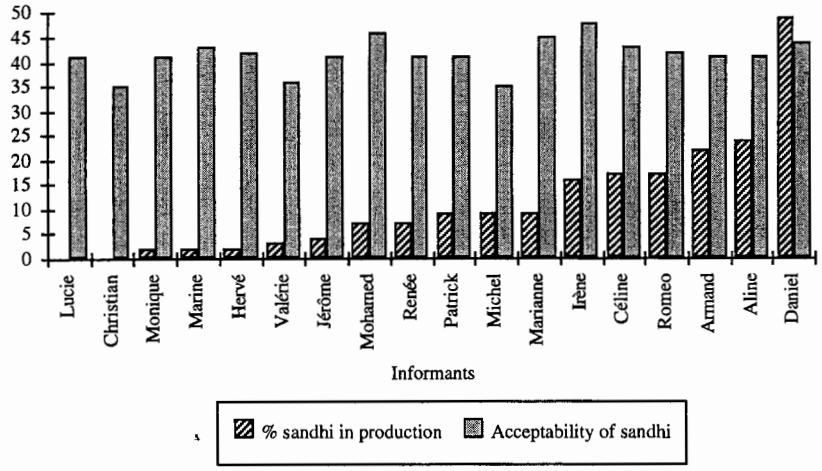
The results by sentences do not show any gradation by process. The three sentences where suppletion applies are grouped together but it is not the case for elision and liaison. In other words, the type of process does not influence the acceptability. All sentences but one, received a total score of 58 or more, which means that the sentences were judged, at the worst as a little odd, but definitely understandable.

The one sentence that stands out from the others is the first one in the table : *J'ai une de ces vues de l'hublot de ma cabine*. It receives a total score of 44. If you average that score by the number of informants, the sentence fits between the 'odd sentence' judgement to the 'needs mental rephrasing before it can be understood' reaction. Although, it is clear that *hublot*', which means 'porthole', is not a very frequent word, there are two other heavily contextualized clues in the sentence which, we might have expected would promote understanding. Yet it remains incomprehensible for three of the 18 listeners.

Sentences where sandhi applies (E= elision, N= liaison in /n/, Z= liaison in /z/, S=suppletion)	**acceptability score**
J'ai une de ces vues de l'hublot de ma cabine (E)	44
T'as vu la longueur des cheveux de l'hippie (E)	58
Ca alors, cet hibou n'arrête pas de cligner des yeux (S)	60
Son hernie discale a disparu en moins de 3 semaines (S)	61
Cet oiseau est magnifique. C'est vraiment le plus bel héron que j'ai jamais vu.(S)	62
Dans ma famille, on Nhurle pour un oui ou pour un non (N)	63
De tous les goudas, l'hollandais est celui que je préfère (E)	63
Je connais une fille qu'a porté plainte pour trois Zharcèlement sexuels en moins d'un an. (Z)	65
Ca alors, l'hérisson que j'ai vu hier dans le jardin a disparu (E)	65
Ici, ils ont de très bons Zhamburgers, mais leurs frites sont pas très bonnes (Z)	67
Les Canadiens et les Russes sont des champions d'hockey sur glace (E)	68
Dis Valérie, est-ce que t'aimes la purée d'haricots verts? (E)	71

Table 9. Acceptability of sandhi application

Figure 5: Production vs perception



The results by informant in Figure 5 are quite interesting as well. There is no clear correlation between the production and the acceptibility. The bars for acceptability correspond to the total of points an informants attributed to the twelve sentences. Because there were twelve sentences and the highest possible rank is four, the most points an informant could give was 48. The bars for sandhi just correspond to the percentage of sandhi application for the speaker. Although the scales are admittedly different, it is clear that there is no correlation between production and perception.

8 Conclusion

This study has confirmed, quantitatively, that the lower class has a weaker *h aspiré* than the rest of the population. However, from the twenty words in this study, there does not seem to be any trend toward a general weakening of *h aspiré*. In fact, *h aspiré* appears to be rather strong. Martinet suggested in 1933 that the spread of education to all social classes might contribute to the resistance of*h aspiré*. *H aspiré* certainly does not come naturally to native speakers of French who do not have access to historical information such as the origin of the words just by the sound of the words. Instead, *h aspiré* words are learned through trials and errors and school is the place where grammatical accuracy is most valued and taught.

The word *handicapé* is clearly exceptional in that it has crossed over and now behaves more like a mute h word than an *h aspiré* word, although not categorically. So there may be some lexical diffusion for that particular word but, if it is the case, it has not spread to any of the other words present in this study. To fully answer that question, we need to look at more *h aspiré* words.

In order to understand the different results found by tasks and to confirm the fact that spelling favors the application of sandhi, it would be interesting to design an experiment based on pictures rather than written tasks. This would certainly eliminate the interference that spelling might have had in this study. In fact, running a picture based experiment on the same words is the next step in the study of *h aspiré*. It will be interesting to see if it yields different results and reveals a much different behavior.

References

Cohen, Marcel (1963). *Nouveaux regards sur la langue française*. (Paris: Editions Sociales).

Grévisse, M. (1994). *Le Bon usage*. 13th ed. (Gembloux: J. Duculot).

Martinet, André. (1933). "Remarques sur le système phonologique du français" in *Bulletin de la Société de Linguistique de Paris,* 34-2:201-202.

Nyrop, Kr. (1904). *Grammaire historique de la langue française, T.1.*, 2nd ed. (Copenhague: Nordisk Forlog).

Appendix: tasks

Word list

une voiture	-	un parking
un pneu	-	un vélo
un rat	-	un hamster
un hangar	-	un bateau
une hôtesse	-	un avion
un cheval	-	un harnais
un Américain	-	un hamburger
une autruche	-	un oeuf
un piano	-	une harpe
un Hollandais	-	un fromage
un paillasson	-	un hérisson
une bague	-	un doigt
un pain	-	une huche
un Allemand	-	une choucroute
un aveugle	-	un handicapé

Sentence blanks

1. Les hélicoptères sont moins _____ que les avions.
2. Dans le cassoulet, on met des haricots _____ .
3. Les cochons d'Inde et les hamsters sont _____ .
4. Les héros sont plus _____ que les héroïnes.
5. Boire du coca avec _____ , c'est honteux!
6. Les homards ont des pinces mais les langoustes _____ .
7. Les handicapés moteurs se déplacent _____ .
8. 'Un héron au long bec emmanché d'un long cou' est le début d'une fable de _____ .

Semantic differentials

une grange et un hangar
un homard et une langouste
détester et haïr
crier et hurler
un haricot et un fève
la chance et le hasard

Sentences

Sujets	Expressions	Verbes
Madonna	avoir eu l'idée de	haleter comme un chien
Je	avoir envie de	caresser des hérissons
Les Américains	refuser de	manger des huîtres
Tu	avoir besoin de	harceler les CRS
Nous	en avoir marre de	voyager en Italie
Dans ma famille, on	accepter de	hurler comme un forcené
Les Hollandaises	arrêter de	partir dans les hauteurs de l'Himalaya
Vous	avoir peur de	haïr les autres