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# Future Temporal Reference in Hexagonal French

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## **Abstract**

This article is the first quantitative investigation of future temporal reference in spoken Hexagonal French. The two variants under examination are the inflected future (e.g. *je partirai* 'I will leave') and periphrastic future (e.g. *je vais partir* 'I am going to leave').

The present study will determine the distribution of future verb forms in Hexagonal French and investigate whether the constraint systems reported for varieties of Canadian French also hold in a European context. By contrasting variable usage with Canadian speech communities, this paper contributes to our understanding of the linguistic factors that unite and divide *la francophonie*. It also adds a French perspective to the existing literature on global linguistic trends.

Results suggest that the strategies of encoding future time in Hexagonal French mirror to a certain degree the findings reported in the extant Canadian literature. Chi-square and fixed/mixed-effects logistic regression models furthermore highlight the complex set of constraints governing the expression of future temporal reference in mainland France. Crucially, they indicate that the inflected form is still highly productive, with a frequency distribution comparable to the conservative Acadian French varieties. Nevertheless, the constraint hierarchy patterns like Laurentian French, with sentential polarity identified as the greatest determinant of variant choice.

# Future Temporal Reference in Hexagonal French

Nicholas S. Roberts\*

## 1 Introduction

Although varieties of Canadian French have been extensively studied using quantitative methods, there is a dearth of sociolinguistic research focusing on language variation in European French. Furthermore, the majority of variationist research conducted on European French is restricted to the analysis of phonological or low-level morphosyntactic variables. The present article proposes to address these deficits. As such, it is the first quantitative investigation of future temporal reference in spoken Hexagonal French.<sup>1</sup> I aim to answer three main research questions: Firstly, how variable is the future temporal reference system in spoken Hexagonal French? Secondly, what linguistic and extralinguistic factors govern the variation? Finally, to what extent do the results corroborate findings reported in the extant French variationist literature focusing on this particular linguistic variable?

## 2 Background

The two variants under investigation are the inflected or morphological future (IF), in (1a), and the periphrastic future (PF), in (1b), which consists of the auxiliary *aller* followed by an infinitive.

- (1) a. Si c'est une petite fille on l'**appellera** Thérèse. (46B)  
'If it's a little girl we will call her Thérèse.'
- b. Alors donc je **vais** vous **donner** le prix plein tarif 393F. (74B)  
'So I am going to give you the full fare price of 393F.'
- c. J'ai fait 300km hier et je **repars** demain. (7B)  
'I travelled 300km yesterday and I leave tomorrow.'

Speakers of French can also encode future time by employing a third variant, the futurate present (FP), in (1c), which has been excluded in this investigation. This choice was motivated by three reasons: (i) the extremely low token numbers of the FP in my data set, (ii) its almost categorical cooccurrence with future adverbials, (iii) the fact that the majority of previous analyses did not submit this variant to quantitative analysis.<sup>2</sup>

According to both prescriptive and pedagogical grammars, the principle linguistic factor conditioning variant selection in the future tense reference system is the temporal distance between speech time and the future eventuality (Hawkins and Towell 2001, Grevisse and Goosse 2008 *inter alia*). Labovian sociolinguistic studies have set out to test this claim quantitatively using actual speech data and have thus far been based exclusively on Acadian (Chevalier 1996, King and Nadasdi 2003, Comeau 2011) and Laurentian (Deshaies and Laforge 1981, Emirkanian and Sankoff 1985, Zimmer 1994, Poplack and Turpin 1999, Blondeau 2006, Poplack and Dion 2009, Grimm 2010, Wagner and Sankoff 2011, Grimm and Nadasdi 2011) varieties of French spoken in Canada.<sup>3</sup> Interestingly, a comparison of the existing literature indicates a clear distinction between both varieties with respect to the distribution of future variants and their respective constraint hierarchies.

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<sup>1</sup>The variety of French spoken in the *métropole* 'mainland France' will henceforth be referred to as 'Hexagonal French'.

<sup>2</sup>Exceptions are Poplack and Turpin (1999) and Poplack and Dion (2009), where the futurate present accounted for only 7% and 9%, respectively, of all future temporal reference tokens.

<sup>3</sup>The term 'Acadian French' denotes those varieties spoken in Atlantic Canada and 'Laurentian French' refers to varieties spoken in Québec and in the provinces west of Québec as a result of westward migration.

Across all Laurentian studies, the PF is identified as the dominant variant and appears to be participating in a very slow change in progress at the expense of the IF. While the PF accounted for 56% of all future temporal reference tokens in nineteenth-century Québec French (Poplack and Dion 2009:572), its usage increases to 73% in the twentieth century (Poplack and Turpin 1999:148). However, trend studies on Montréal French by Blondeau (2006) and Wagner and Sankoff (2011) reveal the opposite pattern: the inflected future increased over time. A life-span pattern, indicative of age grading, appears to reverse the direction of the historical change, acting as ‘a brake on [language] change’ (Wagner and Sankoff 2011:305). Moreover, regarding the constraint systems reported to govern the variation, sentential polarity, and not temporal distance, has a near-categorical effect on variant choice and consistently tops the constraint hierarchy. The inflected future is overwhelmingly preferred in negative contexts, whereas the periphrastic is almost exclusively conditioned by affirmative utterances.

In contrast, in Acadian speech communities, the inflected future is used much more productively. Acadian varieties tend to be regarded as highly conservative in nature, for example, they have preserved a rich inflectional verbal morphology (see King 2000), and therefore the relatively high rates of the IF are not unexpected (King and Nadasdi 2003:325f). Furthermore, as the prescriptive literature has long maintained, the temporal distance between the speech act and the future event is identified as the greatest determinant of variant choice in these varieties, with the periphrastic variant favored in proximal contexts (King and Nadasdi 2003:334, Comeau 2011:227).<sup>4</sup>

### 3 Data and Methodology

The data on which the present study is based were extracted from the Beeching corpus of orthographically transcribed spontaneous spoken French. This corpus, which consists of 95 interviews, was constructed between 1980 and 1990 in both Northern (Brittany and Paris) and Southern (Lot and Minervois) France. The corpus amounts to approximately 150,000 words, the equivalent to roughly 16 hours of speech time.<sup>5</sup>

#### 3.1 The Variable Context

As in previous work, the present study aims to analyze variability in the French future temporal reference system and not merely the morphological exponents of futurity. Consequently, a number of tokens were excluded from the data set following the protocol outlined in Poplack and Turpin (1999:143ff). This is because both variants have a number of structures that exhibit future morphology but do not express future temporal reference. As such, all habitual actions (2a), hypothetical statements (2b), cases where the verb *aller* ‘to go’ is used to indicate spatial movement (2c), and pseudo-imperatives (2d) were not considered in the analysis.

- (2) a. Une fois par semaine on va on **va** s’**occuper** des enfants, on prépare les repas, on surveille. (87B)  
 ‘Once a week we take care of the children, we prepare the dinners, we keep an eye on them.’
- b. C’est-à-dire pour donner un exemple euhm quelqu’un **viendra** vous voir. (86B)  
 ‘In other words to give you an example um someone will come to see you.’
- c. Je vais demander à M. Kerignar. (47B)  
 ‘I am going to ask Mr Kerignar.’
- d. Tu **vas dire** bonsoir à ta grand-mère avant de partir. (23B)  
 ‘Say good evening to your grandmother before leaving.’

Additionally, tokens were excluded if they were repeated, reformulated, occurred in reported speech, precluded variation, such as protases of conditional *si*-clauses, or were invariable.

<sup>4</sup>Note, however, that the cut-off point for what is considered ‘proximate’ is slightly different in both King and Nadasdi (2003) and Comeau (2011): a week in the former and only one hour in the latter.

<sup>5</sup>See Beeching (2002:68–77) for an in-depth overview of the corpus.

In total, 434 tokens that made unambiguous reference to future time, in contexts where speakers must choose between inflected and periphrastic verb forms, were retained for quantitative analysis.

### 3.2 Linguistic Factors

All tokens of the variable were coded for a number of linguistic factors, which have been shown to affect variant choice in Canada, by using the protocol outlined in previous variationist studies (see Poplack and Turpin 1999, King and Nadasdi 2003). These will be detailed below.

#### 3.2.1 Sentential Polarity

Although not operative in Acadian communities (King and Nadasdi 2003, Comeau 2011), sentential polarity has been identified in all the Laurentian studies to be the greatest determiner of variant choice. Thus, in keeping with previous work, the data were coded as either affirmative (3a) or negative (3b).

- (3) a. Ils sont au four donc je vais les sortir. (37B)  
 ‘They are in the oven so I’m going to get them out.’  
 b. Vous serez toute seule dans la rue. Y aura **plus** personne. (23B)  
 ‘You will be alone in the street. There will be no one left.’

#### 3.2.2 Temporal Distance

In order to code for temporal distance, tokens were originally subdivided according to whether the action was set to occur within the hour, the day, the week, the year, or beyond a year. However, coding for such a fine degree of temporal proximity proved problematic. I thus chose to collapse the data into those events and states predicted to occur in the same day as the utterance, as in (4a), and those occurring thereafter, in (4b).

- (4) a. Bon et **maintenant** je vais vous demander d’arrêter le poney. (17B)  
 ‘Right and now I am going to ask you to stop your pony.’  
 b. **L’an 2000** il y aura plus de pétrole. (1C)  
 ‘In the year 2000 there will be no more petrol.’

#### 3.2.3 Adverbial Modification

A number of previous studies report a link between variant choice and the type of adverbial modification (Emirikian and Sankoff 1985, Söll 1983, Poplack and Turpin 1999). I coded for the type of adverbial specification, distinguishing time-specific (5a) and time non-specific adverbials (5b) from the absence of modification (5c).

- (5) a. Ça commencera disons euh **lundi**. (34B)  
 ‘That will start let’s say uh on Monday.’  
 b. Je vais approfondir mon anglais **après** bon ben je vais revenir chez moi. (39E)  
 ‘I am going to improve my English after that well I am going to come back home.’  
 c. On va regarder hein parce que là on peut pas avoir tous les horaires en tête. (74B)  
 ‘I’m going to have a look because you can’t keep all the schedules in your head.’

#### 3.2.4 Grammatical Person and Number

The tokens were coded for all grammatical persons, both singular and plural, some examples of which are given below in (6). For analytic purposes, these categories were collapsed in various ways (as detailed in Section 4).

- (6) a. Oh ça mais bon **je** vais essayer de faire ça assez vite. (36B)  
 ‘Oh that but well I am going to try and do that relatively quickly.’

- b. Oui ça va créer de nouveaux emplois mais **il** va y avoir beaucoup au début. (1C)  
‘Yes it is going to create new jobs but there is going to be plenty at the start.’
- c. **Elles** vont acheter le rôti tout cuit. (23B)  
‘They are going to buy the pre-cooked roast.’

### 3.2.5 Contingency

Previous studies (Deshaies and Laforge 1981, Confais 1995, Wagner and Sankoff 2011) cite contingency as a possible factor constraining the variation, with speakers preferring inflected forms when the future eventuality is dependent upon the fulfillment of a condition. To test this hypothesis, the tokens were coded for whether or not they occurred in a contingent (7a) or an assumed (7b) event.

- (7) a. S’il pleut trop on rentrera plus vite. (65B)  
‘If it rains too much, we’ll go back sooner.’
- b. Ça va coûter je ne sais pas le prix exact 560F à peu près. (11B)  
‘That is going to cost I don’t know the exact price about 560F.’

### 3.2.6 Presence or Absence of *quand* ‘when’

Chevalier (1996:331) hypothesizes that the presence of the interrogative *quand* ‘when’ might affect variant selection. Whilst the favoring effect of this factor does not appear to be operative in Laurentian French (Grimm and Nadasdi 2011), it is identified as statistically significant in King & Nadasdi’s (2003) study of Acadian French. Consequently, I coded for the presence (8a) and absence (8b) of *quand*.

- (8) a. **Quand** mon frère aura treize ans et j’en aurai seize je pense que ce sera beaucoup mieux quoi. (1C)  
‘When my brother is 13 years old and I am 16 I think that it will be a lot better.’
- b. Cherbourg. Alors ça va être 16h17. (80B)  
‘Cherbourg. So that is going to be 4:17pm.’

### 3.3 Social Factors

In addition to the linguistic factors outlined above, the data were also coded for three social factors: age (under 25, over 25), sex, and educational level (no qualifications, *baccalauréat*, university degree).<sup>6</sup>

## 4 Results and Analysis

In this section, I will first present the overall frequency of variant forms and then explore their distribution according to the individual linguistic and social factors hypothesized to affect variant selection. In order to determine which of these significantly condition variation choice, a range of statistical tests were undertaken. A series of individual cross-tabulations and chi-squares were calculated in order to ascertain the effect of individual factor groups on variant selection. Additionally, fixed and mixed effects logistic regression analyses were conducted using the program Rbrul (Johnson 2009). These models have the advantage of indicating the relative magnitude of every factor group simultaneously within one statistical model instead of treating individual factors in isolation.

The overall distribution of the two main future temporal reference variants in the Beeching corpus is provided in Table 1.

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<sup>6</sup>French students take the *baccalauréat* at the end of the *lycée* ‘high school’ at around age 18. It is roughly equivalent to the North American high school diploma.

Variant	N	%
Inflected	179	41.2
Periphrastic	255	58.8
Total	434	

Table 1: Distribution of the future variants in Hexagonal French.

The table reveals that Hexagonal French speakers show a preference for the periphrastic future in spoken language. However, the inflected variant is used more productively in metropolitan France than in all of the Laurentian communities studied to date. In Ontarian French, the incidence of inflected forms is reported to be as low as 11% (Grimm and Nadasdi 2011:9), but as high as 17% (Zimmer 1994:214) and 21% (Emirikian and Sankoff 1985:194) in Montréal. The distribution for Hexagonal French closely mirrors the results for the conservative Acadian varieties, in which the inflected future is used more frequently, with usage rates varying from 53%, on average, in Prince Edward Island and Newfoundland (King and Nadasdi 2003:332) to 38% in Baie Sainte-Marie, Nova Scotia (Comeau 2011:225).

The remainder of this section will focus on the results for sentential polarity, grammatical person/number and educational level. Since none of the other linguistic or social factors (temporal reference, adverbial specification, contingency, the presence of *quand* ‘when’, speaker age or gender) were identified as statistically significant for variant choice in the chi-square analyses, or indeed in the logistical regression analysis, they will not be discussed in detail here.

	Variant				Total
	IF		PF		
	N	%	N	%	
Affirmative	149	38.5	238	61.5	387
Negative	31	62.5	16	34.0	47

$$\chi^2 = 11.999; df = 1; p < .01$$

Table 2: Distribution of the future variants by sentential polarity (binary).

In Laurentian French, the effect of polarity on the choice of future temporal reference variants has been shown to be operative in speech since as least the nineteenth century (Poplack and Dion 2009:574ff). Negative contexts are consistently reported to be one of the last strongholds of the inflected future. The periphrastic, on the other hand, is rarely used in negative constructions.<sup>7</sup> In a recent study of Montréal French, Wagner and Sankoff (2011:285) report that, in all 588 negative contexts identified, only two were realized using the periphrastic construction and both of these involved false starts or hesitations followed by a reformulation. The results in Table 2 reveal that sentential polarity significantly constrains variant selection in Hexagonal French: the IF is clearly preferred in negative contexts (62.5%) and PF in affirmative utterances (61.5%). However, in France, the periphrastic future is highly productive in negative environments (34%), in comparison with varieties spoken in Québec and Ontario.

In Standard French, verbal negation is expressed through a bipartite ‘bracketing’ structure comprising of the pre-verbal negative morpheme *ne* and one of several post-verbal negative items. Although bipartite negation is obligatory in officially sanctioned written French, *ne* is frequently omitted in spoken French and the negative meaning is marked through the sole use of one of the post-verbal negatives. In previous variationist studies on future temporal reference, sentential

<sup>7</sup>Grimm (2010:88), however, reports a relatively high percentage (26%) of negative PFs and suggests that this represents “a possible sign of the IF’s erosion in spoken Ontarian French.”

polarity has been treated as a binary factor group. However, while there is an almost categorical absence of the pre-verbal negative morpheme *ne* in contemporary Laurentian French speech (Sankoff and Vincent 1977), research on European varieties reveals that this particle is still used frequently in spoken language (Coveney 1996). We can therefore deconstruct the negative polarity category into a ternary factor group, consisting of affirmative sentences, negative sentences without *ne* (9a), and negative sentences with *ne* (9b).

- (9) a. Ça **amènera** pas énormément plus de monde. (5B)  
 ‘It won’t bring many more people.’  
 b. Vous n’**allez** pas **arrêter** comme ça. (17B)  
 ‘You aren’t going to stop like that.’

The effect of sentence polarity as a ternary factor group on variant choice is given in Table 3. The use of the inflected future increases as we move from affirmative utterances (38.5%), through to spoken negation without *ne* (61.5%) and finally to negation with *ne* (71.4%), where this variant is most frequent.

	Variant				Total
	IF		PF		
	N	%	N	%	
Affirmative	149	38.5	238	61.5	387
Negative <i>ne</i> deletion	16	61.5	10	38.5	26
Negative <i>ne</i> retention	15	71.4	6	28.6	21

$\chi^2 = 13.484; df = 2; p < .01$

Table 3: Distribution of the future variants by sentential polarity (ternary).

The link between *ne* retention and formal speech style is well-documented in the sociolinguistic literature (Ashby 1981, Coveney 1996, Armstrong 2001). However, the relationship of the inflected variant with other markers of formality, notably with subject pronouns, should also be examined.

The literature boasts a number of hypotheses regarding the effect of grammatical person and number on variant selection. The hypothesis that the periphrastic is more subjective and therefore more likely to occur with first person subjects (see Söll 1983) was not substantiated by the Hexagonal French data. There is, however, a relationship between the formal pronoun of address *vous* ‘you’ to a singular addressee (also known as *vouvoiement*) and the inflected future. The distribution of formal *vous* against all other subject pronouns is given in Table 4.

	Variant				Total
	IF		PF		
	N	%	N	%	
<i>Vous</i>	12	63.2	7	36.8	19
Other	168	40.5	247	59.5	415

$\chi^2 = 6.175; df = 1; p < .05$

Table 4: Distribution of the future variants by grammatical person and number.

When there is a formal *vous* subject, the inflected form is selected in 63.2% of cases, yet it only occurs with 40.5% of all other subject pronouns. The association between the IF and the *vous* pronoun was first identified by Poplack and Turpin (1999:154) in their investigation of Ottawa-



Hull French and is echoed by Wagner and Sankoff’s (2011:296) Montréal study.<sup>8</sup> Research on European French has shown that, in writing, the occurrence of inflected forms far exceeds that of the periphrastic construction. Wales (2002:79) reports that the IF-PF distribution is 90-10% in his *Ouest-France* journalistic corpus; the association of the IF with literacy thus links it to formality. If we follow this line of argumentation, the association of the inflected future with the formal *vous* pronoun of address, as well as negation with *ne*, could therefore be interpreted as evidence of the formal nature of the inflected future in spoken Hexagonal French.

Finally, let us consider the effect of educational attainment on variant choice. A number of previous studies have shown a correlation between variant choice and social class, with upper class speakers producing more inflected tokens than the lower classes (cf. Grimm 2010, Wagner and Sankoff 2011). Due to lack of demographic information regarding speaker class in the Beeching corpus, the present study focuses on informants’ educational level as an indication of their socio-economic standing.<sup>9</sup> Indeed, Poplack and Dion (2009:581) have postulated that educational level might be a good predictor for variant choice, hypothesizing that exposure to formal instruction might correlate positively with the inflected future. Their results, however, indicate that the distribution of the future variants was the same for all speakers, regardless of level of education.

	Variant				Total
	IF		PF		
	N	%	N	%	
No qualifications	80	37.7	132	62.3	212
<i>Baccalauréat</i>	52	38.2	84	61.8	136
University degree	48	55.8	38	44.2	86

$\chi^2 = 12.188; df = 2; p < .05$

Table 5: Distribution of the future variants by educational level.

The results in Table 5 support Poplack and Dion’s initial hypothesis: In metropolitan French, educational attainment does contribute significantly to variant selection. The proportion of inflected forms increases with higher levels of education from 37.7% for those informants with no formal qualifications, to 38.2% for those with a *baccalauréat*, and then to 55.8% for those who hold a university degree. The effect of education, however, is only noticeable for those informants who have studied at university level. This finding would therefore lend evidence to support the claim that, unlike in Canada, the French higher-education system could act as a source of transmission for the ‘prescriptively sanctioned’ form.

### 5 Multiple Logistic Regression Models

Tables 2–5 examined the individual linguistic and social constraints underpinning future temporal reference variability in Hexagonal French. Mainstream variationist sociolinguistic methodology tends to include all factor groups simultaneously within one statistical model (Bayley 2002, Paolillo 2002). Consequently, and in order to allow comparability with previous findings, a fixed-effect multiple logistic regression analysis was conducted using the statistical package Rbrul (Johnson 2009). The outcome of the logistic regression analysis in Table 6 corresponds well with the results reported in the individual cross-tabulations. All significant results reported in Section 4 emerge as statistically significant in the larger model. In line with all the Laurentian studies, sentential polarity is identified as the most significant factor governing the variation (with a range of 34), followed by grammatical person/number (range 24) and finally educational level (range 18).

<sup>8</sup> Sankoff (2011) included *vouvoiement* in the broader ‘formal subject type’ category, which also includes the first person plural subject pronoun *nous* ‘we’ as well as full nominals.

<sup>9</sup> In the sociolinguistic literature, a range of different indices have been used in the past to measure social class (see Milroy and Milroy 1985, Maclagan, Gordon, and Lewis 1999 inter alia).

	<b>Log Odds</b>	<b>Total Tokens</b>	<b>Uncentered Weight</b>
<b>Sentential Polarity</b>			
Affirmative	0.762	387	0.68
Negative: <i>ne</i> deletion	-0.319	26	0.42
Negative: <i>ne</i> retention	-0.444	21	0.34
			<i>Range 34</i>
<b>Person/Number</b>			
Other	0.493	415	0.62
Formal <i>vous</i>	-0.493	19	0.38
			<i>Range 24</i>
<b>Educational Level</b>			
No qualifications	0.250	212	0.56
<i>Baccalauréat</i>	0.235	136	0.56
University degree	-0.485	86	0.38
			<i>Range 18</i>
Deviance = 563.309; df = 7; Grand mean = 0.585			

Table 6: Factors contributing to the selection of the PF (fixed effects).<sup>10</sup>

Upon closer inspection, I noticed that a number of informants with no qualifications display high rates of the periphrastic future (e.g., 16B: 78%, n=36) and, likewise, some speakers who hold a university degree use the inflected form comparatively more (e.g., 91B: 81%, n=21). Whilst the fixed-effects model accounts for between-group effects (like educational level), it cannot account for the fact that ‘some individuals might favor a linguistic outcome [...], over and above [...] what their age, gender, social class, etc. would predict’ (Johnson 2009:365). Mixed-effects regression models, however, *are* capable of taking potential random effects, such as speaker-level variation, into consideration and only select factors as statistically significant ‘when [they are] strong enough to rise above the inter-speaker variation’ (ibid). I thus decided to run a mixed model on the data, including speaker as a random effect.

Table 7 reveals that once we consider the effect of speaker on variant choice, educational level is discarded from the model. At the same time, the range for polarity remains stable at 33 and the range for grammatical person and number increases slightly from 24 to 28.

	<b>Log Odds</b>	<b>Total Tokens</b>	<b>Uncentered Weight</b>
<b>Sentential Polarity</b>			
Affirmative	0.914	387	0.71
Negative: <i>ne</i> retention	-0.442	21	0.39
Negative: <i>ne</i> deletion	-0.472	26	0.38
			<i>Range 33</i>
<b>Person/Number</b>			
Other	0.566	415	0.64
Formal <i>vous</i>	-0.566	19	0.36
			<i>Range 28</i>
Deviance = 549.882; df = 5; Grand mean = 0.585			

Table 7: Factors contributing to the selection of the PF with speaker as a random effect.

<sup>10</sup>Regression coefficients are expressed as both a log-odd and a weighted probability (factor weight). Log-odds range from positive to negative infinity: A positive log-odd indicates a favoring effect, whilst a negative one is a disfavoring effect. A value of 0 is neutral.

Hence, a model that controls for speaker variability only selects two factors as conditioning future temporal reference in Hexagonal French: sentential polarity and grammatical person and number. Crucially, Johnson (2010:11) has illustrated that similar pitfalls may be encountered if we ignore the effect of individual word-level variation. Indeed, a number of verbs appear to be selected almost categorically with the IF (e.g., *avoir* ‘to have’: 80%, n=31) and the PF (e.g., *travailler* ‘to work’: 88%, n=7). I thus decided to control for lexical effects by including individual verb as a random effect.

	Log Odds	Total Tokens	Uncentered Weight
<b>Sentential Polarity</b>			
Affirmative	0.951	387	0.72
Negative: <i>ne</i> deletion	-0.338	26	0.42
Negative: <i>ne</i> retention	-0.613	21	0.35
			<i>Range 37</i>
Deviance = 529.817; df = 5; Grand mean = 0.585			

Table 8: Factors contributing to the selection of the PF with speaker and lexeme as random effects.

Table 8 displays the results of a mixed model that includes both speaker and lexical verb as random effects. The only factor now identified as statistically significant is sentential polarity (range 37). Its log-odds have increased compared to the fixed effects models from 0.762 to 0.951 for affirmative utterances; from -0.319 to -0.338 for negative contexts with *ne* dropped; from -0.444 to -0.613 for negative contexts where *ne* is retained.

## 6 Conclusion

This paper is the first quantitative variationist investigation of future temporal reference in Hexagonal French. By contrasting variable usage with studies focusing on varieties of French spoken in Canada, this paper contributes to our understanding of the linguistic factors that unite and divide *la francophonie*. It furthermore highlights the importance of analyzing sociolinguistic data with mixed effects regression models, including both speaker and lexeme as random effects. The results reveal that the strategies of encoding future temporal reference in Hexagonal French mirror, to a certain degree, the findings reported for Canadian varieties. Crucially, they indicate that the IF is still highly productive in speech in European French, with a frequency distribution comparable to what is found in conservative Acadian varieties. Despite this, the constraint hierarchy patterns more like Laurentian French, with sentential polarity identified as the most influential linguistic factor to determine variant choice.

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