The future of Martinique French: The role of random effects on the variable expression of futurity

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Abstract

This article adds a Caribbean perspective to the analysis of futurity by presenting a quantitative variationist investigation of the competing forms used by speakers to encode future time in the French *département et région d'outre-mer* of Martinique. The two variants under investigation are the inflected future (*je partirai* 'I will leave') and the periphrastic future (*je vais partir* 'I am going to leave'). In this variety, the periphrastic future is identified as the most frequent variant. Fixed-effects and mixed-effects models furthermore tease apart the complex set of constraints governing variant selection and demonstrate the repercussions of considering speaker and lexical effects when analysing sociolinguistic data. Indeed, once individual speaker and word-level variation are controlled for, the future variable in Martinique French is constrained purely by temporal distance: while the periphrastic future acts as the default option in the majority of time contexts, the inflected future functions as *the* marker of distal time.

Keywords: French, futurity, Martinique, sociolinguistics, variationist

Résumé

Cet article ajoute une perspective caribéenne à l'analyse du futur en présentant une étude quantitative variationniste des formes en concurrence employées par les locuteurs pour exprimer le temps futur dans le département et région d'outre-mer de la Martinique. Les deux formes à l'étude sont le futur fléchi (*je partirai*) et le futur périphrastique (*je vais partir*). Dans cette variété, on identifie le futur périphrastique comme étant la variante la plus fréquente. De plus, des modèles à effets fixes et à effets mixtes dégagent l'ensemble complexe de contraintes

gouvernant la sélection des variantes et démontrent les conséquences du fait de considérer le locuteur et les effets lexicaux lors de l'analyse de données sociolinguistiques. En effet, lorsque l'on contrôle l'effet du locuteur et de la variation au niveau du mot, la variable du futur en français martiniquais est contrainte purement par la distance temporelle : alors que le futur périphrastique constitue l'option par défaut dans la majorité des contextes, le futur fléchi sert de marqueur du futur éloigné.

Mots-clés: Français, futur, Martinique, sociolinguistique, variationniste

1. INTRODUCTION

This study reports on a quantitative variationist investigation of the competing forms used to express futurity in the French Caribbean territory of Martinique. To this effect, I investigate the overall distribution of future verb forms in spoken Martinique French and explore whether the constraint systems reported for other varieties of French also hold in a Caribbean context. In the course of this analysis, competing statistical methods (fixed versus mixed-effects models) will be tested in order to assess the extent to which random effects, such as individual speaker and lexical verb, affect the variance in the French future temporal reference system (cf. also Roberts 2012). Such an approach is of particular importance when examining variation in Martinique since high levels of interspeaker variability have previously been reported in the speech of individuals living in small island communities, such as on Tristan da Cunha in the South Atlantic Ocean (Schreier 2006). It will also enable us to build a more comprehensive picture of the variable grammar in this regional French variety.

In all contemporary varieties of French, future temporal reference is realized predominantly via three different constructions: the inflected future (IF)[1], given in (1a), the periphrastic future (PF), in (1b), and the futurate present (FP), in (1c). This article focuses exclusively on the alternation between inflected and periphrastic future verb forms. The third variant, the futurate present, has been excluded from my investigation. This decision was motivated by two main reasons: (i) it occurs infrequently in spoken French and almost categorically co-occurs with future time adverbials; (ii) the vast majority of previous studies did not submit this marginal variant to variationist analysis.[2]

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[1]The following abbreviations are used: FP-future present, IF-infected future, PF-periphrastic future, DROM-*département et région d'outre-mer*.

[2]Poplack and Turpin (1999) is the only study to include the futurate present in multivariate analyses for French. Their data were extracted from the Ottawa-Hull corpus (Poplack 1989), which contains approximately 3.5 million words and is therefore of sufficient size to contain enough tokens of the rare FP variant for an adequate statistical analysis of variation.

(1) a. Je **prendrai** à peu près une année sabbatique. [MAJ][3]
          'I will take about a year off.'

     b. Je ne pense pas qu'ils **vont voter** pour lui. [NOR]
          'I don't think they are going to vote for him.'

     c. L'année prochaine je **pars** en métropole. [DOT]
          'Next year I leave for the mainland.'

2. PREVIOUS STUDIES

In both prescriptive and pedagogical grammars, the two main linguistic factors governing variant choice are claimed to be (a) the temporal distance between speech time and the future eventuality and (b) the degree of certainty expressed by the speaker that the future event will in fact take place (Grevisse and Goosse 1993, Hawkins and Towell 2001). The periphrastic future, for instance, has been claimed to mark "souvent un futur proche, parfois aussi un futur relativement lointain mais considéré comme inéluctable" (Grevisse and Goosse 1993: 1230).[4] Variationist linguistic studies have tested these claims quantitatively based on Laurentian (Deshaies and Laforge 1981, Emirkanian and Sankoff 1985, Zimmer 1994, Poplack and Turpin 1999, Blondeau 2006, Poplack and Dion 2009, Grimm 2010, Grimm and Nadasdi 2011, Wagner and G. Sankoff 2011, Sankoff et al. 2012) and Acadian (Chevalier 1996, King and Nadasdi 2003, Comeau 2011) varieties of Canadian French, as well as European French (Söll 1983, Roberts 2012).[5]

These studies have demonstrated that the constraint systems operating on the variable are much more complex than the prescriptive literature suggests (see sections 4.2 and 4.3). Furthermore, they have shown that, in speech, there exists a general tendency for speakers toprefer periphrastic verbs forms. In Laurentian French, the frequency of inflected forms is reported to range from only 11 % (N = 135) in Ontarian French (Grimm and Nadasdi 2011: 181) to 22 % (N = 725) in Ottawa-Hull (Poplack and Turpin 1999: 148).[6] In contrast, there is a greater prevalence of the IF (41 %, N = 179) in European French (Roberts 2012: 101) and in the more conservative Acadian varieties: IF usage rates vary from 38 % (N = 257) in Baie-Sainte

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[3]Speaker IDs are given throughout the present article in square brackets. The letters represent the first three letters of each speaker's pseudonym.

[4]'[O]ften a near future but also sometimes a relatively distal one that is considered unavoidable' (my translation).

[5]The term 'Laurentian French' denotes varieties genetically related to Québec French. 'Acadian French' refers to those varieties spoken in the four Atlantic provinces of New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island. I also henceforth refer to the French of mainland France as Hexagonal French. This appellation reflects the common name for France's mainland European territory, *l'hexagone* 'the Hexagon', which is itself a reference to the approximate shape of the French mainland on a map.

[6]The percentage scores for Poplack and Turpin (1999) have been recalculated here to exclude the futurate present to ensure comparability with other studies that excluded this variant.

Marie, Nova Scotia (Comeau 2011: 226) to 53 % (N = 362) in Prince Edward Island and Newfoundland (King and Nadasdi 2003: 332). For written French, we find a reversal of this trend. Lesage and Gagnon (1993) and Wales (2002) report that the incidence of IF forms far exceed that of the periphrastic future in their journalistic corpora: 97 % in Québec and 90 % in *Ouest-France* regional newspapers.

3. THE DATA

With a population of nearly 400,000 people (IEDOM 2010: 24), the volcanic island of Martinique is the third largest island in the Lesser Antillean archipelago. More specifically, it is located to the south of Dominica and to the north of Saint Lucia. It is bordered by the Caribbean Sea to the west and the Atlantic Ocean to the east. Martinique has been incorporated into the institutional, political, and legal framework of the French state since 1946 (see Hintjens 1995, Reno 1995).[7] Nowadays, Martinique forms an integral part of the French Republic as a *département et région d'outre-mer* 'overseas mono-departmental region' (DROM).[8] The native islanders of Martinique (*les Martiniquais*) are thus full French citizens. Even though the island is located approximately 7000 km from Paris, Martinique nevertheless constitutes part of France just like any other French *région* or *département*,[9] as the quotation below from Burton (1995: 2) confirms:

> The Frenchness of [Martinique] is undeniable. It is not just the *Monoprix* and *Unimags* [supermarkets, NSR] […], not just the administrative and political superstructures, the French-style educational and social security systems, the *autoroutes* chock-a-block with Peugeots, Citroëns and Renaults […], not just the *baguettes*, the day-old copies of *Le Monde* and *Libération*, the *mulâtresses* in the latest Paris fashion. Far deeper than such surface manifestations, the Frenchness of Martinique […] involves a mentality produced by more than 350 years of near-continuous occupation by France.

The data discussed in this article are derived from a corpus of spoken Martinique French (see Roberts 2014). The corpus comprises approximately 16 hours of semi-directed interviews which I conducted between December 2010 and February 2011. The analysis is based on a socially-balanced judgement sample of 32 informants, all of whom originate from the Saint-Pierre *arrondissement* 'administrative district' in the northwest of the island. Other than for schooling, they have remained

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[7]In fact, Martinique has legally been part of France for a longer period of time than parts of the mainland, such as Savoie (Burton 1995).

[8]In addition to Martinique, there are four other DROMs: Guadeloupe,which is also located in Lesser Antilles to the north of Dominica, La Guyane,which forms part of the South American mainland, La Réunion and Mayotte, bothof which can be found in the South Indian Ocean near Madagascar.

[9]Mainland French territory is separated into five subdivisions ofever-decreasing size: *région, département, arrondissement,canton*, and *commune*. In the DROMs, the *région* and the *département* occupy the same geographical space.

in this area for their entire lives.[10] The data were gathered using a semi-directed sociolinguistic interview protocol. The main aim of the sociolinguistic interview is to elicit the informants' vernacular style. Labov (1972: 208) defines the vernacular as "the style in which the minimum attention is given to the monitoring of speech". More recent definitions have affirmed that the vernacular is "everyday speech" (Sankoff 1980: 54), "real language in use" (Milroy 1992: 66) or "the language of locally based communities" (Eckert 2000: 17), among others. To reduce the formality of the conversation, I conducted the recordings at a location of the informants' choosing: they took place in a classroom, in the schoolyard, in a private work office, at home, on the beach or in a quiet café. The questions I asked my participants were based on the modules, or topic areas, found in a traditional sociolinguistic interview (Labov 1972) but they were adapted to community-specific issues and traditions (Meyerhoff and Walker 2007).[11]

Given Martinique's DROM status, French constitutes the official language of the native islanders. The inhabitants of Martinique also speak a French-lexifier Creole, known as *créole martiniquais* (see Pinalie and Bernabé 2000, Bernabé 2003 inter alia). The sociolinguistic situation in Martinique is often characterized as diglossic (Ferguson 1959). Traditionally, the use of Creole is reserved for informal conversation among friends and family, whereas Standard French is taught in schools and is used in more formal, public situations. Recent empirical research on present-day language use in Guadeloupe, the other French DROM located in the Lesser Antilles, reveals that the use of the local Creole variety has become highly restricted. In a recent study of Guadeloupe French, Pustka (2007a: 261) notes that, nowadays, the vast majority of *Guadeloupéens* acquire the local variety of French as their L1 rather than a supralocal variety. This is also the case in Martinique, which has traditionally been viewed as more assimilated to mainland France, both linguistically and culturally, than its sister island (Pustka 2007b: 60).

All of my participants spoke the regional variety of French and the local French-lexifier Creole to varying degrees of competency. I chose to control for my informants' level of bilingualism by using a modified version of Mougeon and Beniak's (1991: 72) language-restriction index. Essentially, the index provides a quantitative measure of informants' use of French in interpersonal communication. The language-restriction index has been extensively utilized in research on bilingual communities in Ontario, Canada (see Mougeon and Nadasdi 1998 and Nadasdi 2005 inter alia) and has produced consistent findings concerning the effect it exerts on speakers' choice of variant forms. For instance, more restricted speakers display a tendency to prefer morphologically simple forms: In their study of irregular 3PL

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[10]Not all of the speakers had remained in the Nord-Caraïbe for their entire lives. Permanent residency in the area was not a prerequisite for inclusion in my speaker sample. This is because time outside of the research site is a reflection of the local demographic. This was especially the case with my older informants, who were required to move away to attend *lycée* 'high school' and university. Other than for schooling, none of the speakers had spent more than onecontinuous year away (see also Smith and Durham 2011).

[11]See Roberts (2014: 259–270) for the interview schedules devised for the present study.

verbs (e.g., *ils comprennent* 'they understand'), Mougeon and Beniak (1991: 101–103) demonstrate that speakers with greater levels of restriction prefer to simplify the verbal paradigm so that 3SG and 3PL verb forms are homophonous (e.g., *il(s) comprend* 'he/they understand'). Moreover, research has illustrated that speakers in the restricted cohort tend to limit their use of informal variants. They display lower rates of schwa deletion (Mougeon et al. 2002), /l/ deletion (Tennant 1995), subject doubling (Nadasdi 2000), *ne*-use (Burdine and Mougeon 1999), *ça fait que* as an expression of consequence (Mougeon and Beniak 1991), and the restrictive construction *rien que* (Rehner and Mougeon 1998).

On the basis of their different life experiences, I created two separate surveys for my younger speakers and older participants, respectively. The questions focused on language use in a variety of communicative settings (e.g., home, classroom, playground, church) as well as with a range of interlocutors (e.g., mother, father, friend, spouse, boss, teacher). They also assessed the direction of the exchange (informant to interlocutor or interlocutor to informant). In each case, speakers were asked to rate how often they communicate in French and *créole martiniquais* on a four-point scale, ranging from 'always in French' to 'always in Creole'.

I subsequently scored each response from zero to three depending on whether the participants spoke, or were spoken to, always in Creole (0), mostly in Creole (1), mostly in French (2), always in French (3). Each question was equally weighted, regardless of the setting, interlocutor(s), or directionality. A mean index score was then calculated for each subject ranging from zero (i.e., they always communicate in Creole) to one (i.e., they only spoke French). Traditionally, Mougeon and collaborators have classified speakers into one of three groupings on the basis of their language restriction score: 'restricted' speakers are those who use French infrequently (<0.45); 'semi-restricted' speakers have mid-to high levels of restriction (0.45–0.79) and communicate in both languages in relatively equal proportions; 'unrestricted' speakers are the most frequent users of French (>0.79).

The restriction scores of my Martinique informants range from 0.52 to 0.91. There are no restricted speakers, 17 semi-restricted speakers, and 15 unrestricted speakers. This distribution appears to corroborate Pustka's (2007a, 2007b) observation that the islanders in France's Caribbean territories are indeed predominantly L1 French speakers. Note further that, although previous research on Ontario French has treated this social factor group as a discrete variable, I include each speaker's individual language-restriction score in the quantitative analyses reported in subsequent sections.

4. METHODOLOGY

This section has two principal aims: firstly, to define the envelope of variation, with those tokens falling outside the variable context identified and excluded from quantitative analysis, and secondly, to present and explain the salient linguistic and social constraints hypothesised to constrain variant selection in the Martinique future temporal reference sector, along with the coding protocol adopted in the present study.

4.1   Excluded tokens

The variationist linguistic enterprise seeks to correlate the use of sociolinguistic variants with linguistic and social conditioning factors. According to Labov's (1972: 72) 'principle of accountability', it is first necessary to identify the contexts in which a variant did occur, as well as those cases in which it could have occurred but did not. This practice, known as "clos[ing] the set that defines the variable" (Labov 1996: 78), aims to create a homogenous dataset that is not contaminated by semantically and pragmatically non-equivalent cases. Only once these instances have been identified and removed from the data pool will the remaining tokens respond well to quantitative analysis (Coveney 2007: 103). As a result, every verb form that featured IF tense morphology and every *aller* periphrasis was first extracted from the Martinique corpus using the AntConc concordance program (Anthony 2011). However, since the present study analyses variability in the French *future temporal reference sector* and not merely those verbal forms featuring future morphology, I excluded a number of tokens in line with the protocol for delimiting the variable context which was first outlined in Poplack and Turpin (1999: 143–145) and refined in more recent work (cf. Grimm and Nadasdi 2011: 174–175, Wagner and Sankoff 2011: 279–284).

Following this procedure, I discarded all 'false futures', that is those tokens that exhibit future morphology but do not actually reference a future eventuality. As such, all habituals (2a), hypotheticals (2b), instances of *aller* 'to go' used to indicate spatial movement (2c), and imperatives/pseudo-imperatives (2d) were excluded from the dataset and not considered in my quantitative analysis. It was also necessary to remove those tokens that have a future temporal reference but do not have full variability: for example, tokens occurring in the protases of conditional *si*-clauses (2e) were discarded as such contexts prohibit IF.

(2)   a.   **Des fois** on va rigoler avec le professeur. [NOR]
                'Sometimes we'll have a laugh with the teacher.'

   b.   Si **par exemple** tu sors avec la fille tu vas pas lui parler créole. [AUB]
            'If for example you are going out with a girl you are not going to
            speak to her in Creole.'

   c.   Oui moi je **vais voir** si elle est là. [MAC]
            'Yes I am going to see if she is here.'

   d.   **Va** pas lui **remplir** la tête avec des bêtises. [JOU]
            'Don't go filling his head with rubbish.'

   e.   **Si** je vais les gronder je vais parler en créole. [VAV]
            'If I'm going to tell them off I'm going to speak Creole.'

Finally, tokens were excluded if they had been primed by the interviewer, occurred in fixed expressions, reported speech or metalinguistic commentary, were interrupted, repeated, or reformulated.

In total, 513 tokens that made unambiguous reference to future time were retained for quantitative analysis. Each instance of the variable was coded for a

number of internal and external constraints. In order to facilitate cross-dialectal comparison, I oriented to the coding protocols developed in previous research on French future temporal reference (Poplack and Turpin 1999, King and Nadasdi 2003, Grimm and Nadasdi 2011). Sections 4.2 and 4.3 illustrate the coding scheme adopted for the present study.

4.2 Linguistic conditioning factors

The data were coded for a total of seven linguistic factor groups: temporal distance, adverbial specification, sentential polarity, certainty, grammatical person, the influence of *si* 'if', and the presence or absence of *quand* 'when'. I will discuss each factor group in turn.

4.2.1 Temporal distance

The principal linguistic factor claimed by traditional grammars of French to condition variant selection is the temporal distance between the speech act and the future event (Grevisse and Goosse 1993). In this literature, PF refers to proximal events and states, in contrast to IF, which is preferred for distal time contexts. Variationist studies of Laurentian French, however, report that this factor group exerts a small effect on variant choice (Poplack and Turpin 1999, Poplack and Dion 2009), whereas it is identified as the most influential linguistic constraint in Acadian communities (King and Nadasdi 2003, Comeau 2011). In order to capture any distinction between the two variants on the basis of temporal distance, I coded for a fine degree of possible outcomes on the continuum of future reference: whether the verbal action was set to occur within the day (3a), the week (3b), the year (3c), or a period longer than a year (3d), as well as those token with a continuous (3e) or an indeterminate future reference (3f).

(3)   a. Alors ça c'est une question difficile. Je **répondrai** en nuançant. [ALB]
          'Well that's a difficult question. I will qualify my answer.'

      b. Elle sera encore là **samedi**. [MAE]
          'She will still be there on Saturday.'

      c. **Au mois de juin** j'aurai 19 ans. [TEM]
          'In June I will be 19 years old.'

      d. Il ne sera pas réélu en **2012**. [NOR]
          'He will not be re-elected in 2012.'

      e. On sera là pour **une semaine encore**. [MYR]
          'We will still be here for another week.'

      f. Un jour ça va peut-être commencer à secouer. [IRL]
          'One day it is going to perhaps start to shake.'

4.2.2 Adverbial specification

The literature reports a link in Laurentian French between variant choice and the type of adverbial modification. Poplack and Turpin's (1999: 151–152) ternary

conceptualization suggests that the futurate present is preferred in the presence of a specific time adverbial, such as *demain* 'tomorrow'. In contrast, the inflected future is associated with non-specific adverbials, such as *plus tard* 'later', while the periphrastic variant is favoured in contexts with no adverbial modification (see also Emirkanian and Sankoff 1985). To capture the potential effect of this factor group, I coded for the type of adverbial specification, distinguishing specific (4a) and non-specific adverbials (4b) from the absence of any modification (4c).

(4) a. Après en **septembre** il y aura les sénatoriales. [MAN]
         'Afterwards in September there will be the Senate elections.'

     b. Et puis **après** je pense que je vais partir. [KAG]
         'And afterwards I think I'm going to leave.'

     c. On sait pas ce qui va nous arriver. [ORT]
         'We don't know what is going to happen to us.'

4.2.3   Sentential polarity

The effect of sentential polarity has been largely ignored by prescriptive grammars (Poplack and Dion 2009). Indeed, it is not operative in Acadian French (King and Nadasdi 2003, Comeau 2011) and in other Romance languages, such as Brazilian Portuguese (Poplack and Malvar 2007) and varieties of Spanish (Orozco 2005, 2007; Blas Arroyo 2008; Osborne 2008). However, all Laurentian studies have identified the polarity of the future eventuality as the most influential linguistic constraint. It has been operative since at least the nineteenth century (Poplack and Dion 2009) and has a strong effect on variant choice: affirmative contexts massively favour PF while negative environments near-categorically licence IF selection (Poplack and Turpin 1999, Blondeau 2006). Indeed, Wagner and Sankoff (2011: 285) report that, in all 588 negative constructions identified in their combined 1971 and 1984 Montréal dataset, only two were realized as the periphrastic variant and both of these involved false starts, hesitations, and reformulations. Given the influence of this constraint, I coded all tokens as either affirmative (5a) or negative (5b).

(5) a. En France je **serai** seule. [NOR]
         'In France I will be alone.'

     b. Même s'il veut partir je **ne** le suivrai **pas**. [MIP]
         'Even if he wants to leave I will not follow him.'

Moreover, in Roberts (2012), I deconstructed the negative polarity category and identified a link between the type of negation and variant choice. In Hexagonal French, IF-use increases from 38 % (N = 149) in affirmative contexts to 61.5 % (N = 16) in utterances with the negative particle *ne* omitted and then to 71.4 % (N = 15) in utterances with full bipartite negation (Roberts 2012: 102). I therefore decided to operationalize polarity as a four-way constraint: affirmative sentences (see 5a), negative utterances with only post-verbal negation (6a), negative utterances with full bipartite negation (6b), and those contexts in which it is not possible to identify

if the negative morpheme *ne* has been realized, such as in liaison contexts where *on* 'one' is followed by a vowel (6c).

(6) a. Ça va **rien** changer. [TEM]
         'That is going to change nothing.'

     b. Ça **ne** va **plus** se reproduire. [MAN]
         'That is not going to happen again.'

     c. On **(n')** aura **pas** de glissement de terrains. [ALB]
         'We won't have any landslides.'

4.2.4   Certainty

The literature indicates that the certainty of the outcome of the future eventuality may also impact upon variant choice: PF is preferred when the state or event is deemed certain to occur, while the IF is linked to doubtful outcomes (Franckel 1984). Coding for the degree of certainty is extremely difficult and highly subjective and there is thus no one perfect approach for operationalizing this factor group. This is because subtle semantic or pragmatic distinctions in the message the speaker wishes to convey cannot be easily identified in the absence of overt contextual cues. Nevertheless, the presence of adverbials, such as *bien sûr* 'of course' or *peut-être* 'maybe', do facilitate the decision-making process as they clearly indicate whether a token is deemed by the speaker to be certain or not. Consequently, I have adopted King and Nadasdi's (2003: 330) protocol, which was developed with the aim of coding each token using criteria that were as objective as possible. In essence, if adding *sans aucun doute* 'without any doubt' to the variable token rendered the future event more certain to occur, it was coded as uncertain (7a). If this was not the case, however, the token was deemed to be certain (7b). If the certainty of the future eventuality could not be ascertained, the token was coded as unknown (7c).

(7) a. Je vais **peut-être** continuer ou je vais directement changer de filière. [VAV]
         'I am perhaps going to carry on or I am going to completely change my course of study.'

     b. On va gagner en efficacité **certainement**. [MAN]
         'We are certainly going to gain in efficiency.'

     c. Moi je pense qu'il va rester. [JUF]
         'I think that he is going to stay.'

4.2.5   Grammatical person

Various subject types have been shown to influence variant selection. For instance, Poplack and Turpin (1999: 154) establish a relationship between the use of formal *vous* to a singular addressee (also known as *vouvoiement*) and the inflected future (see also Wagner and Sankoff 2011, Roberts 2012). Furthermore, claims that the PF is more subjective and therefore more likely to occur with first person subjects is substantiated by data from Hawkesbury, Ontario (Grimm 2010) and France (Söll 1983). In light of these findings, tokens of the variable were coded for all grammatical

persons, both singular and plural, some examples of which are given in (8a–c). For
analytic purposes, these were collapsed in various ways as detailed in section 5.1.

(8)   a.   **Tu** vas pas revenir là? [CLU]
           'Are you not going to come back here?'

      b.   **Il** y aura bien sûr une bibliothèque. [JOB]
           'There will of course be a library.'

      c.   Même **les tortues** vont disparaître. [GEM]
           'Even tortoises are going to disappear.'

4.2.6   *The Influence of* si *'if'*

Previous Laurentian studies have shown that speakers display a tendency to prefer
inflected future forms when the future event is dependent on the outcome of
another (Poplack and Turpin 1999, Blondeau 2006, Wagner and Sankoff 2011). In
most cases, contingency is indicated by a conditional *si* 'if' + present + future se-
quence. In order to test this hypothesis, tokens were coded according to whether
they occurred in the apodosis of a *si*-clause (9a) or not (9b).

(9)   a.   Si on va pas au Maroc on **va faire** un séjour en Angleterre. [MIP]
           'If we don't go to Morocco we are going to have a holiday in England.'

      b.   b. Le Morne des Cadets on **va** surtout te le **montrer**. [MYR]
           'Le Morne des Cadets we are definitely going to show you.'

4.2.7   *The presence or absence of* quand *'when'*

Finally, the favouring effect of *quand* 'when' for IF selection has been illustrated with
data from both Acadian (King and Nadasdi 2003) and Laurentian French (Wagner
and Sankoff 2011). Consequently, occurrences of the variable were coded for the
presence (10a) or absence (10b) of *quand* 'when'.

(10) a.   **Quand** je serai grande je mangerai beaucoup de bonbons. [ORT]
           'When I'm older I will eat lots of sweets.'

      b.   Elle va comprendre ce que vous lui dites. [MAC]
           'She is going to understand what you say to her.'

4.3   Social conditioning factors

Tokens were also coded for four social factors: age, sex, educational level, and lan-
guage restriction.

4.3.1   *Age*

The results from both apparent-time research (Comeau 2011, Roberts 2012) and a
trend study on Montréal (Sankoff et al. 2012) indicate that the two main future var-
iants are relatively stable across time and are not undergoing any major change.
However, research on Laurentian French suggests that the periphrastic future is par-
ticipating in a change in progress at the expense of the IF in apparent time

(Emirkanian and Sankoff 1985, Zimmer 1994, Poplack and Turpin 1999). Younger speakers favour the use of PF and, in turn, the older informants prefer IF. Poplack and Dion's (2009) real-time work on Québec and Ottawa-Hull French has corroborated this finding. Their results indicate that an increase in the frequency of the periphrastic variant is linked to a concomitant decline of the inflected future (Poplack and Dion 2009: 572). In contrast, Blondeau's (2006) and Wagner and Sankoff's (2011) Montréal panel studies demonstrate that speakers actually increase their use of IF over the course of their life span. In light of these conflicting findings, I decided to test whether age influences variant use in Martinique.

4.3.2   Sex

While a number of studies have shown that sex is not operative on the selection of IF or PF verb forms (Poplack and Turpin 1999, Roberts 2012), research on some Canadian varieties has demonstrated that females are more likely to use PF, while males employ the inflected variant comparatively more (Comeau 2011, Grimm and Nadasdi 2011). I therefore coded all tokens for the sex of the speaker.

4.3.3   Educational level

Previous Laurentian studies have shown a linear correlation between variant choice and social class, with upper and middle-class speakers producing more IF tokens than working class informants (Emirkanian and Sankoff 1985, Grimm and Nadasdi 2011, Wagner and Sankoff 2011). Relatedly, research using informants' educational attainments as a marker of their socioeconomic standing suggests that increased use of the inflected future positively correlates with higher levels of education (Roberts 2012). The present study also focuses on educational level. Speakers were categorized depending on whether they had no formal qualifications, a *baccalauréat*, or a university degree.

4.3.4   Language restriction

Finally, I chose to examine the effect of language restriction on variant selection. Recall that this constraint measures how often speakers use either French or *créole martiniquais* in interpersonal communication (see section 4). Although this factor group has received little attention in previous research on future temporal reference (cf. Grimm 2010, Grimm and Nadasdi 2011), work on other grammatical variables in Ontarian French frequently reports significant results for this particular social factor (cf. Mougeon and Beniak 1991). Consequently, I decided to investigate whether variable levels of restriction in the daily use of French played a role in variant choice in my Caribbean data.

4.4   Data analysis

The first stage of quantitative data analysis involves computing the frequency of each variant in my Martinique corpus. I calculate the relative frequency of individual variants in proportion to the total number of potential occurrences. In practice, variant

frequency is calculated by dividing the raw token count of a variant by the total number of potential occurrences, that is, the overall frequency of the variable. To ensure maximal comparability with previous and future research, I follow standard variationist methodology and report both the raw empirical data as well as the normalised results (Macaulay 2002: 299, Tagliamonte 2006).

To determine which linguistic and social constraints significantly contribute to variant choice and to uncover the variable grammar that underpins the choice of variant forms, the data are submitted to statistical analyses. Variationist research has long-demonstrated that multiple contextual factors condition variation in a language at the same time (the 'principle of multiple causes', Young and Bayley 1996: 253). Mainstream variationist methodology therefore advocates examining all factor groups simultaneously, instead of carrying out a factor-by-factor analysis and treating individual constraints in isolation (Bayley 2002, Paolillo 2002, Tagliamonte 2006).

To this end, I use the standard statistical tool in variationist research, namely fixed-effects multiple logistic regression. While this analysis has traditionally been performed using the Varbrul software programs, for example GoldVarb Lion (Sankoff, Tagliamonte and Smith 2012), the present article relies on the increasingly prevalent Rbrul package, which has become very popular in recent years (Johnson 2009). The main functions of Rbrul are the same as GoldVarb: the software uses a stepwise multiple logistic regression procedure to assess the contribution of the predictor (independent) variables on the choice of the binary response (dependent) variable. However, the Rbrul program offers a number of advantages for data analysis (Johnson 2009: 360–365). For instance, unlike GoldVarb, it can handle continuous variables. As such, the language restriction predictor variable in the present study does not have to be packaged into discrete groupings.[12] Also, Rbrul can better deal with KnockOuts (Tagliamonte 2006: 152–153) and interaction effects can be tested in a very straightforward manner.

Another benefit of using Rbrul for quantitative analysis is that the software incorporates mixed-effects modelling (see Baayen 2008). Traditional fixed-effects models cannot account for speaker-level and word-level variation. In other words, they assume that there is no variation above the level of the token. This assumption is not warranted as linguistic data "are naturally grouped according to the individual speakers who produced them" (Johnson 2009: 363). Mixed models, on the other hand, are capable of taking random effects, such as individual speaker and word-level variation into account.[13] They are therefore "able to account for the fact that

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[12]I do not consider speaker age to be a continuous variable since my informants cluster into two clearly defined age brackets: those under 20 and those over 39 years old. The treatment of age as a continuous variable would thus be artificial and mask a binary condition.

[13]The main difference between fixed and random effects is that the former are repeatable. For instance, a fixed effect, such as preceding phonological context, would have identical factor levels in a replication study of the same speech community. However, individual speaker is considered a random effect, as a new random sample of the population would yield a completely different set of speakers (see Johnson 2009).

individual speakers may contribute different amounts of data, and that they may favour or disfavour individual variants as well as particular factor levels to a greater or lesser degree than a fixed model would predict" (Pichler 2013: 33). This approach to data analysis is of particular relevance to the present study as high levels of interspeaker variability have previously been reported in the speech of individuals living in island communities (Schreier 2006). A mixed-effects model thus reduces the risk that outliers might skew the results since the program only selects factors as statistically significant "when they are strong enough to rise above the inter-speaker variation" (Johnson 2009: 365).[14]

Importantly, I assess the effect of linguistic and social factors in separate multi-variate analyses. This analytical step reduces the possibility of Type II errors, that is Rbrul failing to identify an effect that does exist (Johnson 2009: 365; Tagliamonte 2012: 130–131, 141). It is also in keeping with the French variationist tradition.

Each table presents the total number of tokens per cell (see *Tokens* in multivariate tables), the number of tokens of the application value, that is the non-standard variant, for each factor level (*N*) and the relative proportion of the application value (%). In all of the multivariate tables, I also detail the *deviance*, the degrees of freedom (*df*), the *intercept*, and the *grand mean*. The deviance is a quantitative measure of how well the model fits the data. In other words, it assesses the extent to which the actual data deviate from the predictions of the model: the smaller the deviance, the better the fit. The degrees of freedom relate to the number of observations that are free to vary (see Field, Miles and Field 2012: 38). The intercept acts as the baseline for the model and can be combined with log-odds to calculate a specific prediction that the model would make (Johnson 2009: 361–362). The grand mean indicates the overall frequency of that response variable in the data. Finally, I give the *Nagelkerke R*^{2} value for the fixed-effects models, which is used to gauge the proportion of the variation in the data that is explained by the model.

The impact of a particular factor on the application value is presented as a regression coefficient. In Rbrul, these are expressed as both a *log-odd* and a *centred weighted probability* (or *factor weight*).[15] Log-odds range from positive to negative infinity: In general, a positive log-odd indicates a favouring effect, a negative log-odd is a disfavouring effect and a value of 0 indicates a neutralizing effect. In contrast, weight probabilities are measured on a scale from 0 to 1: a factor weight greater than 0.5 denotes a favouring effect, less than 0.5 signals that the application value is disfavoured and a factor weight of 0.5 is neutral.[16] Since the vast majority of

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[14]Note, however, that it is also possible to model individual variation using GoldVarb (see Paolillo 2013).

[15]In GoldVarb, regression coefficients are only presented as uncentred factor weights. These coefficients are affected by the size of the cell they represent. Given the unbalanced nature of sociolinguistic data, Rbrul automatically centres all factor weights when they are converted from log-odds (Johnson p.c.).

[16]Tagliamonte (2006: 156) notes that the interpretation of factor weights is not necessarily such a straightforward matter. In reality, factors only favour/disfavour the application value

sociolinguistic research presents results as factor weights, I have chosen to report both types of regression coefficient for nominal factor groups. However, I report only the log-odd value for language restriction. In this case, the predictor variable is not a factor group and therefore cannot be assigned a corresponding factor weight.

To build a more complete picture of the variable grammar in the variety of French under investigation, multivariate analyses provide us with 'three lines of evidence' (Poplack and Tagliamonte 2001: 93–94; Tagliamonte 2002, 2013: 122–124). These are: (a) statistical significance, (b) the range, and (c) the constraint hierarchy. Concerning statistical significance, the factor groups displayed in the logistic regression models, have all attained significance at the $p < 0.05$ level and thus influence speakers' choice of variant in speech. The *range*, also known as the magnitude of effect, is the value which indicates the relative strength of a factor group and situates it with respect to the other predictor variables: the greater the range, the greater the effect of the factor group on variant choice. Finally, the constraint hierarchy is the ordering of the factors in a factor group from the most to the least favouring context. These three results will be used to establish and explain the constraint systems underpinning the variability in the morphosyntax of Martinique French speakers. They will allow us to triangulate the use of variants in Martinique with previously studied French speech communities located in Canada and Europe.

5. RESULTS AND ANALYSIS

Table 1 reveals that there is a marked preference for the PF in the spoken French of Martinique: it is selected in 72.3 % (N = 371) of all potential occurrences.

All inflected and periphrastic future tokens were subsequently submitted to multiple logistic regression analyses using the program Rbrul (Johnson 2009) with the PF set as the application value. The models generated by this software identify which linguistic and social constraints, outlined in sections 4.2 and 4.3, contribute to variant choice at a statistically significant level. In the following sections, I will discuss the results of the multivariate analyses.

5.1 Linguistic factors

The outcome of the fixed-effect regression analysis is shown in Table 2.[17] In total three linguistic factor groups were retained by the model as statistically significant: temporal distance, grammatical person, and adverbial specification. Let us now investigate the effect of these constraints in more detail.

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relative to the otherfactors within the same factor group (Johnson p.c.). It is the relative position of a factor in the constraint ranking that is more important than the actual factor weight.

[17] In Rbrul, regression coefficients for nominal factor groups are expressed as both a factor weight (i.e., a weighted probability) and a log-odd. A factor weight greater than 0.5 indicates that the periphrastic future is favoured by this factor, while a value smaller than 0.5 shows that the inflected variant is favoured instead.

Variant	N	%
Inflected future	142	27.7
Periphrastic future	371	72.3
Total	513	100.0

Table 1: Distribution of IF and PF future variants in Martinique French

	Factor Weight	%	N	Tokens	Log-odd
Temporal distance					
Within 24 hours	0.78	88.4	38	43	1.252
Within the week	0.67	81.3	26	32	0.706
Indeterminate	0.65	77.0	261	339	0.612
Within the year	0.59	71.9	23	32	0.338
Longer than a year	0.24	39	16	41	−1.178
Continuous	0.15	26.9	7	26	−1.729
Range 63					
Grammatical person					
Other	0.81	75.5	367	486	1.45
Impersonal il	0.19	14.8	4	27	−1.45
Range 62					
Adverbial specification					
Specific	0.7	82.4	28	34	0.885
No modification	0.49	72.6	326	449	−0.053
Non-specific	0.3	56.7	17	30	−0.823
Range 40					

Not significant: Sentential polarity, Adverbial specification, Certainty, Influence of *si*, Presence/Absence of *quand*

Deviance = 505.181; df = 9; Intercept = −0.592; Mean = 0.723; Nagelkerke R^2 = 0.256

Table 2: Fixed-effect regression analysis of linguistic factors contributing to PF selection

Temporal distance is selected as the most influential linguistic constraint with a range of 63. This finding is in line with both Acadian studies (King and Nadasdi 2003, Comeau 2011), which report that this factor group is the strongest predictor of variant choice. Note that the hypothesis that PF is more frequent in cases where the future event is proximal to the speech act is substantiated by the present study. Crucially, the probability that speakers will select the periphrastic future declines with increasing temporal distance from 0.78 when the action is set to occur within the day, to 0.67 for within the week, and to 0.59 for within the year. The variant then becomes disfavoured when reference is being made to something expected to

occur over a year following speech time (FW = 0.24), as well as in continuous contexts (FW = 0.15). Hence, in Martinique, there appears to be a linear correlation between the choice of future variants and temporal distance.

Not only is the Martinique data the first to report a straightforward linear association between future variants and the degree of temporal distance in French, the proximate/distal cut-off point in the Martinique system differs notably from what we find in Acadian varieties. King and Nadasdi (2003: 333) report that, for Newfoundland and Prince Edward Island, only those events expected to occur up to a week following speech time favour PF. In Baie Sainte-Marie, Comeau (2011: 227–228) notes that speakers only select the periphrastic variant for events set to occur within an hour of utterance time. Both Acadian studies report that the factor weights remain relatively stable at the 0.5 level after a week post-speech time. This result indicates that the effect of temporal distance in these varieties is neutralized in the more distal time contexts. In Martinique, however, the probability that speakers will select the periphrastic future gradually declines and PF becomes disfavoured only after 12 months.

When investigating temporal distance, the question of how to deal with tokens to which it was not possible to ascribe a precise future reference came to the fore. A full 66 % (N = 339) of tokens in my data were ambiguous in this regard. These indeterminate tokens generally favour the periphrastic construction (FW = 0.65). Since Rbrul does not allow the exclusion of tokens from a specific factor group while retaining them in all others, I decided to rerun the model using GoldVarb Lion (Sankoff et al. 2012), which is similarly based on the same statistical principle, namely multiple logistic regression. I was thus able to remove those tokens with an indeterminate temporal reference and analyze only those tokens associated with a clear-cut temporal reference. The outcome of the multivariate run on the GoldVarb platform (not displayed) reveals that the ranges for temporal distance and adverbial specification remain stable at 63 and 40 respectively, although the range for grammatical person decreases from 62 to 48. Thus, in essence, the ranking of constraints remains the same. This effectively means that these tokens with indeterminate future reference do not seem to have a large impact on the overall model.

The literature contains a number of claims concerning the role of grammatical person (see section 4.2.5). Crucially, in Martinique French, no relationship was detected between *vouvoiement* and the IF. Also, claims that the periphrastic future is more subjective and therefore more likely to occur with first person subjects were not substantiated by my data. The only significant conditioning effect exerted by a personal pronominal form was that of impersonal *il* constructions, an example of which is provided in (4a). Table 2 reveals that the impersonal *il* subject strongly favours the selection of the inflected future (FW = 0.19), yet the periphrastic construction is preferred with other subject pronouns (FW = 0.81).

The results in Table 2 also indicate that non-specific adverbials favour the inflected future (FW = 0.30). This result echoes Poplack and Turpin's (1999: 151–152) findings for Ottawa-Hull. Specific adverbials, on the other hand, are shown to have a favouring effect on the periphrastic construction (FW = 0.70), whereas the absence of adverbial modification has a neutralizing effect (FW = 0.49). This

Speaker ID	Adverbial specification: No modification				Total
	Inflected future		Periphrastic future		
%	N	%	N		
LUJ	0.0	0	100.0	8	8
KAG	10.0	1	90.0	9	10
MYR	13.3	2	86.7	13	15
ELN	20.0	3	80.0	12	15
MAE	54.5	12	45.5	10	22
NOR	77.8	14	22.2	4	18

Table 3: Cross-tabulation of future variants unmodified adverbially by speaker

last finding is somewhat unexpected, since it is the PF that is traditionally preferred in unmodified contexts (Poplack and Dion 2009: 573, Comeau 2011: 228–229). Moreover, note that this factor group is not identified as significant in an isolated chi-square calculation ($\chi^2 = 5.400$, df = 2, $p = 0.670$). When I deconstructed the 'no modification' category for each speaker (see Table 3), I noticed that a number of informants display higher-than-expected rates of the periphrastic future (e.g., LUJ: 100 %, N = 8 and KAG: 90 %, N = 9). Likewise, some speakers use the inflected future comparatively more (e.g., NOR: 77.8 %, N = 14 and MAE: 54.5 %, N = 12).

Importantly, the fixed-effect model in Table 2, while accounting for between-group effects, assumes that there is no variation above the level of the token and thus "individual-speaker and individual-word variation do not exist" (Johnson 2010: 7). As Table 3 illustrates, this assumption is not warranted. Mixed-effect regression models, on the other hand, are capable of taking random effects, such as speaker variability, into consideration. Mixed models only identify a factor group as statistically significant when it is "strong enough to rise above the inter-speaker variation" (Johnson 2009: 365). I therefore decided to return to Rbrul to run a mixed model with individual speaker as a random effect. Table 4 reveals that, unsurprisingly given the results in Table 3, once we consider the effect of speaker on variant choice, adverbial specification is discarded from the model.

Additionally, while the ranking of individual factors within the factor groups has remained constant, the overall hierarchy of the constraint system has changed: grammatical person is now identified as the strongest predictor of variant choice with a range of 66, whereas the range for temporal distance remains stable at 61.

Johnson (2010: 11) has also illustrated that similar pitfalls in data analysis may be encountered if the effect of individual word-level variation is ignored. Indeed, while the role of lexical verb has been acknowledged in the future temporal reference research literature (Poplack and Turpin 1999, Wagner and Sankoff 2011), its overall effect has been comparatively under-researched from a quantitative perspective (cf. Roberts 2012). Crucially, I noticed that a number of verbs in impersonal *il* constructions appear to occur very frequently, if not categorically, with the inflected future (e.g., *il y aura* 'there will be': 90 %, N = 18; *il faudra* 'it will be necessary':

	Factor Weight	%	N	Tokens	Log-odd
Grammatical person					
Other	0.83	75.5	367	486	1.67
Impersonal *il*	0.17	14.8	4	27	−1.67
Range 66					
Temporal distance					
Within 24 hours	0.76	88.4	38	43	1.155
Within the week	0.70	81.3	26	32	0.857
Indeterminate	0.61	77.0	261	339	0.443
Within the year	0.60	71.9	23	32	0.388
Longer than a year	0.24	39.0	16	41	−1.117
Continuous	0.15	26.9	7	26	−1.727
Range 61					

Not significant: Sentential polarity, Adverbial specification, Certainty, Influence of *si*, Presence/Absence of *quand*

Deviance = 497.154; df = 8; Intercept = −0.441; Mean = 0.723; Speaker Random Std Dev = 0.779

Table 4: Mixed-effect regression analysis of linguistic factors contributing to PF selection with speaker as a random effect

100 %, N = 5).[18] It might thus be the case that the previously unattested result for grammatical person is masking a purely lexical effect. I decided to control for such an epiphenomenon by including individual verb as a random effect. The results of a mixed model that includes both speaker and lexical verb as random effects are displayed in Table 5.

Now, grammatical person is not selected as significant, which suggests that the significant effect in Table 2 was indeed epiphenomenal. The only linguistic factor that remains in the model is temporal distance. Also, the regression coefficients have altered considerably from the initial fixed-effects analysis. The linear relationship between the decreasing weighted probabilities and the increasing temporal distance has been lost completely. Those events set to occur up to a year following speech time all favour the periphrastic future to the same degree (FW = 0.66–0.68). There is a clear temporal divide, with actions occurring in the most distal time context strongly disfavouring this variant (FW = 0.27). This result is in stark contrast to what is reported for Acadian varieties, in which the PF acts as a marker of proximity and the temporal distinction becomes neutralized in the more distal time

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[18]The very low count of tokens co-occurring with an impersonal *il* subject may be affecting the overall model. Nevertheless, I decided to include this low-frequency factor group in the present analysis since the percentage score for this cell (5.3 %) exceeds, albeit slightly, Guy's (1988) minimum 5 % threshold for variable rule analysis (see Buchstaller et al. 2010 for a discussion on low token frequency in the analysis of quotatives).

	Factor Weight	%	N	Tokens	Log-odd
Temporal distance					
Within the year	0.68	71.9	23	32	0.570
Within 24 hours	0.67	88.4	38	43	0.704
Within the week	0.66	81.3	26	32	0.682
Indeterminate	0.64	77.0	261	339	0.570
Longer than a year	0.27	39.0	16	41	−1.011
Continuous	0.15	26.9	7	26	−1.711
Range 53					

Not significant: Sentential polarity, Adverbial specification, Certainty, Grammatical
person, Influence of *si*, Presence/Absence of *quand*

Deviance = 381.722; df = 8; Intercept = −0.587; Mean = 0.723; Speaker Random Std Dev = 0.727; Lexical Verb Random Std Dev = 2.033

Table 5: Mixed-effect regression analysis of linguistic factors contributing to PF selection with speaker and lexical verb as random effects

contexts.[19] In Martinique French, PF is the default option in the majority of cases and it is the inflected variant that functions as an indicator of distal outcomes.

5.2 Social factors

In order to assess the overall effect of the social constraints, I conducted another fixed-effect analysis in Rbrul. Table 6 reveals that both educational level and language restriction emerge as statistically significant in the logistic regression model.

Poplack and Dion (2009: 581) first hypothesized that educational attainment could be a good predictor for variant choice. They posit that schools and higher educational institutions might be successful in transmitting the "prescriptively sanctioned" form. In other words, exposure to formal instruction might positively correlate with the inflected future. Their results for Laurentian French, however, indicate that this is not the case and that the distribution of the future variants is the same, regardless of informants' educational level. The results from Martinique, however, do appear to substantiate Poplack and Dion's initial postulate. In my dataset, an increase in educational level has a disfavouring effect on PF usage. Whereas those informants without any formal qualifications favour the use of the periphrastic future (FW = 0.60), it is those speakers with either a *baccalauréat* (FW = 0.42) or a university degree (FW = 0.42) who prefer the inflected variant. In recent research, I have reported a very similar effect for European French (Roberts 2012: 103). The crucial difference between the two studies, however, is that the effect of education in mainland Europe is only noticeable for those informants

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[19]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 an hour in the latter.

	Factor Weight	%	N	Tokens	Log-odd
Educational level					
No qualifications	0.60	76.5	283	370	0.437
Baccalauréat	0.42	60.3	41	68	−0.112
University degree	0.42	62.7	47	75	−0.325
Range	*18*				
Language restriction				513	+1 −0.037
Not significant: Age, Sex					

Deviance = 588.726; df = 4; Intercept = 3.589; Mean = 0.723; Nagelkerke R^2 = 0.046

Table 6: Fixed-effect regression analysis (Rbrul) of social factors contributing to PF selection

who have studied at university level. In Martinique, on the other hand, as the findings in Table 6 indicate, successful graduation from the secondary school system seems to be conducive to increased use of the inflected future.

Let us now consider the role that language restriction plays on variant choice. To date, research on Franco-Ontarian communities has categorized speakers into one of three groups depending on their language restriction score (Mougeon and Beniak 1991). 'Restricted' speakers are those who use French infrequently (<0.50), 'semi-restricted' informants have mid-to-high levels of restriction (0.50–0.79) and thus communicate in both languages in relatively equal proportions, while 'unrestricted' speakers use French as their main language (>0.79). However, since the Rbrul package used in this study can handle continuous variables, I ran an analysis that considers each speaker's individual language-restriction score.

Grimm and Nadasdi (2011: 184–185) postulate that speakers with higher levels of restriction in the use of French may demonstrate a tendency to prefer morphologically analytic forms. Resultantly, given the morphological complexity of the French inflected future, we might expect reduced IF rates amongst these informants. Grimm and Nadasdi's (2011: 183) own research on future temporal reference reveals that there is no significant difference between this factor group and the choice of variants in Ontarian French.

In my Martinique French data, on the other hand, this factor group is operative in speech. The log-odd coefficient for language restriction (+1, −0.037) indicates that the periphrastic future becomes disfavoured as we move further up the language restriction scale.[20] In other words, the more speakers use French on a daily basis, the

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[20]Rbrul only reports the effect of a continuous variable as a log-odd and not as a weighted probability. Unlike factor weights, log-odds range from positive to negative infinity: A positive regression co-efficient indicates a favouring effect, a negative value is a disfavouring effect and a value of zero is neutral.
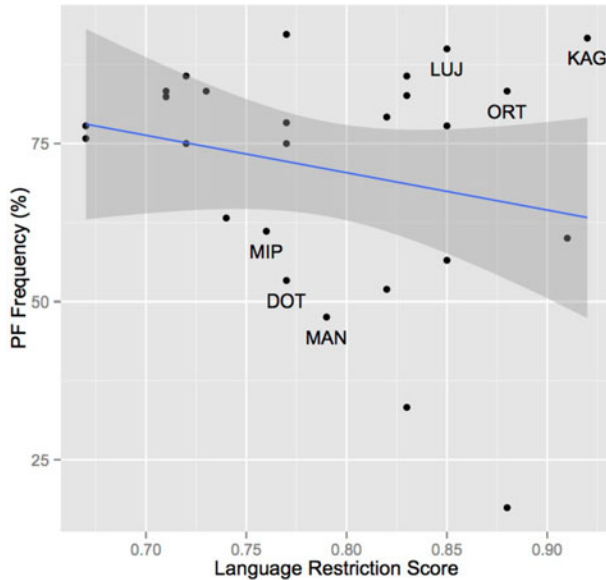
Figure 1: Profile of individual speaker's language restriction scores and their use of PF (higher index score = less restriction in the use of French).

greater the likelihood that they will select the inflected variant. This general trend is confirmed by the graph in Figure 1.

Note, however, that the scatterplot in Figure 1 identifies a number of informants who display somewhat unexpected behaviour. Certain semi-restricted speakers employ the inflected variant much more frequently than their unrestricted counterparts (e.g., MAN: 52.38 %, N = 11; DOT: 46.67 %, N = 7; MIP 38.89 %, N = 7). Likewise, a number of unrestricted speakers use the PF more often than we would expect from their restriction score (e.g., KAG: 91.67 %, N = 11; LUJ: 90 %, N = 9; ORT: 83.33 %, N = 10). Moreover, concerning educational level, some speakers with no qualifications (e.g., NOR: 82.60 %, N = 19; DOT: 46.67 %, N = 7) exhibit unexpectedly high rates of the inflected future, while others who hold a *baccalauréat* (e.g., ELN: 77.77 %; N = 14) or a university degree (JOU: 85.71 %, N = 6) select PF comparatively more often.

As was the case with the linguistic constraints, a fixed-effect run for social factors cannot account for the fact that "some individuals might favour a linguistic outcome […], over and above […] what their age, gender, social class, etc. would predict" (Johnson 2009: 365). I therefore decided to once again run a regression analysis on the data and included speaker as a random effect. Notably, once we consider the effect of speaker on variant choice, none of the social factors are retained as significant: both educational level and language restriction are discarded from the mixed model.

6. CONCLUSION

In conclusion, this article examined the variable nature of future temporal reference in Martinique French. Results revealed grammatical differences between Caribbean and Hexagonal varieties. In Martinique French, speakers prefer to encode future time by employing the periphrastic future; usage rates of this variant are comparable to Laurentian French communities in Canada. Fixed- and mixed-effects models furthermore highlighted the idiosyncratic constraint system operating in this locality. Temporal distance, and not sentential polarity as in Laurentian and European French, topped the constraint system: while the periphrastic future acts as the default marker of futurity, the inflected future functions as a marker of distal time. The variable grammar of futurity in Martinique French therefore patterns like the highly conservative enclave Acadian varieties.

How can we conceptualize the fact that two varieties of French share the same constraint system, even though they are situated approximately 2200 miles (3500 km) apart? Geographically isolated communities, like Martinique and the Atlantic Provinces in Canada, are often viewed as linguistically conservative and do not partake in language change as much as urban mainland communities do (Andersen 1988). The constraint systems in both varieties may therefore be lagging behind those found in contemporary Hexagonal and Laurentian French (see also Trudgill 1999: 27), in which the robust effect of polarity has been well documented. If temporal distance was indeed once operative in European varieties pre-colonization, it may therefore have been transplanted to Martinique and the Atlantic Provinces in Canada by the input varieties spoken by the first settlers. Such an explanation, however, implies that the temporal distinction in European and Laurentian varieties (that we still see in Martinique) has been lost in favour of the polarity constraint. At the moment, we are not in the position to answer this question with certainty because diachronic investigations into the historical development of the variable grammar that governs the future temporal reference system in French are notably lacking.

While Varbrul software packages have traditionally been utilized in variationist research to perform multivariate analyses, the present article relied on the Rbrul package, which has become an increasingly prevalent analytic tool in recent years. One of the main benefits of using Rbrul is that it incorporates mixed-effects modelling, which allowed me to test for the effect exerted by variation 'above the level of the token'. I was thus able to explain more of the variation by evaluating the effect that individuals may have on the data.

Speaker and lexical verb effects were shown to considerably alter the constraint systems governing the choice of future forms. In fixed models, a range of constraints was shown to be operative in Martinique: temporal distance, grammatical person, adverbial specification, educational level, and language restriction all constrain the expression of futurity. However, once random effects were accounted for, results indicate that only one factor group, namely temporal distance, actually influences the variable expression of futurity in Martinique French. Poplack and Malvar (2007: 137) note that "the lion's share of [future] variant choice is ascribed to subtle semantic or pragmatic distinctions in the message the speaker wishes to

convey" (see also, for example, Fleischman 1982). What this effectively means is that the differences between the two main future variants are highly subjective and contingent on psychological notions, such as intention, certainty, doubt, and proximity (see Poplack and Turpin 1999, Poplack and Malvar 2007, Poplack and Dion 2009). It is exactly this non-overt/grammatically-encoded, rather than overt-contextualised, information in the discourse which may lead to high levels of speaker variability. This contrasts with subject doubling and *ne*-omission in Martinique French (Roberts 2014). Both of these variables are predominantly governed by structural constraints, such as the type of subject or the presence/absence on intervening clitics. As these constraining factors do not rely on access to speaker motivations regarding epistemicity or modality, they are more accessible than the temporal distinction governing the expression of futurity. The different types of factors influencing variation selection might therefore offer an insight into why the strong effect of speaker-level variation is detectable with the future cross-dialectally in both Martinique and Hexagonal French varieties (see also Roberts 2012: 103–105). They might also, as in Buchstaller and D'Arcy's (2009) research, offer an insight as to why the future in Martinique, but not *ne* and subject doubling, patterns so differently to non-isolated varieties of French.

In summation, this article has identified the linguistic and social correlates of further temporal reference variation in a hitherto under-researched variety of French. On-going comparative work on varieties of English has revealed very important insights into the localised use of supralocal features. This comparatively new avenue of research in French sociolinguistics will ultimately further our knowledge of the complex set of constraints that unite and divide *la francophonie*.

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