

CHAPTER 17

GRAMMATICALIZATION AND LINGUISTIC VARIATION

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1. INTRODUCTION

Grammaticalization theory (GT) and variation theory (VT) have traditionally made uneasy bedfellows, but in many ways they are natural allies. For one thing, they share a number of underlying assumptions that are not often made explicit. For another, GT furnishes strong hypotheses about change, many of which are amenable to empirical test. VT has a well-developed framework for the study of change in progress, powerful methods for deciding amongst competing hypotheses, and an incipient but growing tradition of applying them to major issues in grammaticalization (Aaron 2006; Poplack 2001; Poplack and Tagliamonte 1996; 2001; Schwenter and Torres Cacoullous 2008; Tagliamonte 2003; 2004; Tagliamonte and Smith 2006; Torres Cacoullous 1999; 2001; 2009; in press; Zilles 2005). In this chapter, I first detail the most pertinent of these shared assumptions, highlighting similarities and differences in the two approaches. I then describe the variationist

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take on grammaticalization, and outline some of the ways in which VT can contribute to grammaticalization studies.

Finally, by way of illustration, I apply the variationist method to a paradigm example of grammaticalization cross-linguistically: the development of future markers from the motion verb *go*. I will show that this approach is particularly well-suited to tracking pathways of grammaticalization, through its capacity to elucidate the transition period between endpoints of change. In the process, I will argue that GT can be checked, modified, and subtly enhanced by taking account of the fine details of inherent variability and the empirical analysis of grammaticalization in progress.

2. SHARED ASSUMPTIONS

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The primacy of language use, the ubiquity of variability, and the gradualness of change are cornerstones of both GT and VT. The central assumption is that the fundamental object of study is language *use*, as opposed to some idealization of how language *should* be used (e.g. Brinton and Traugott 2005; Bybee 1998a; Hopper 1987). The careful observer of language use, especially as instantiated in speech, cannot help but be struck by its rampant *variability*. Thus, in recounting a series of past habitual actions, all with the same temporal reference and (ostensibly) meaning, the African Nova Scotian English speaker in (1) nonetheless alternates among the preterite, *used to*, *would*, and bare verb forms. This variation is present whether change is occurring or not.

- (1) [4] How did you get your clothing? You know, you were small?
 [066] When I was small, no, somebody *give* her something, we *had* it or else she *took* the flour bag. [4] Mhm. [066] *Used to buy* the flour bag and white bags with the Robin Hood on it. And she *boiled* it on the stove ‘til she *got* the Robin Hood out of it. [4] Mhm. [066] And then she *would* uh- *make* us a pair of pants. (066.1227)¹

Now, a key premise of GT is that on the path to achieving grammaticalization, a number of (more and less grammaticalized) forms may be simultaneously available to express the same meaning. Hopper (1991) calls this type of form–function asymmetry *layering*; it is a subset of what variationists refer to as *inherent variability*. The existence of layering entails that alongside the grammaticalizing form,

¹ Codes refer to speaker number and line number in the *Corpus of African Nova Scotian English* (Poplack and Tagliamonte 2001). Examples are reproduced verbatim from speaker utterances.

other variant forms will be jockeying for the same linguistic work. Yet grammaticalization is usually construed—and studied—as the set of changes involved in the association of *one* form with a new (presumably more grammatical) meaning or function, downplaying, or even ignoring, the role of other layers coexisting in that context. As I will show, without an understanding of how these layers accommodate to the incursion of the emergent form, we obtain only a very partial (and sometimes misleading) view of the grammaticalization process.

The standard structural linguistic view of language *change* ($A > B$) suggests that it (1) is abrupt, and (2) involves total replacement. In contrast, many grammaticalization theorists espouse the VT view that change is characterized (and preceded) by variation, proceeds gradually across time and linguistic contexts, and may never result in completion (Heine and Kuteva 2005; Brinton and Traugott 2005; Mair 2004). Contemporary usage data are in fact rife with residual forms which are highly restricted, fossilized, or endowed with entirely new discourse functions. Thus, although the grammaticalization of French *pas* ‘step’ into a postverbal negator—and the concomitant evanescence of preverbal *ne*—is uncontroversial, *ne* shows no signs of disappearing. This despite an infinitesimal rate of occurrence (0.2 per cent) in spoken Québec French over the last century and a half (Poplack and St-Amand 2007). It persists as a marker of highly formal speech (Poplack, Bourdages, and Dion 2009).

3. A VARIATIONIST MODEL OF GRAMMATICALIZATION

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3.1. The variationist perspective on change

The standard variationist construal of change involves the progressive increase of one of a set of variant expressions of a meaning or function until it ousts its competitors from the grammatical sector. It follows that the most straightforward way of tracing change is by rate, and this is what most grammaticalization studies do (e.g. Hundt 2001; Krug 2000; Macaulay 2006; Mair 2004, to name but a very few). But since grammaticalization involves a specific type of change (i.e. lexical to grammatical and grammatical to more grammatical), it is particularly instructive to examine what happens to the structure of the grammar during the course of the change, when a number of layers/variants are still extant. The idea is not just to record the grammaticalizing form, but to compare the structure of the *context* hosting it at each stage over as long a time frame as possible.

The variationist hypothesis is that *structure can be discerned from the distribution and conditioning of variant forms* (Poplack and Tagliamonte 1996; 2001; Torres Cacoullos 2009; in press). This structure, instantiated in the quantitative patterning of variants across elements of the context, can be converted into a diagnostic and compared over different stages of the language to yield a detailed view of the transition between endpoints of change. The more such stages there are, and the farther apart, the more revealing the picture of the trajectory. As illustrated in sections 4 and 5 below, this can illuminate many of the proposed mechanisms of grammaticalization. Variationists have been experimenting with ways to tap into diachronic benchmarks old enough to reveal the evolution of change, while at the same time reflecting the spoken language, the prime locus of change. Analysis of speech surrogates, which represent earlier stages without necessarily being oral themselves, have been quite revealing in this regard (Poplack and Malvar 2007; Elsig and Poplack 2009; Poplack and Dion 2009).

3.2. Method

3.2.1. *The significance of context in the study of change*

The key construct in VT is the *linguistic variable*, or ‘different ways of saying the same thing’ (Labov 1972a: 94). Identification of a linguistic variable rests on the possibility of circumscribing the specific domain in which variants alternate without change in representational meaning, or, as Sankoff (1988) puts it, where any differences in meaning embodied by competing forms have become neutralized in discourse. This is the *variable context*, whose discovery and definition is fundamental to the study of linguistic variation and change. (The variable context in (1), for instance, may be defined as the domain of habitual past.) Grammaticalization theorists also espouse the idea that grammaticalization proceeds in specific domains or constructions (e.g. Brinton and Traugott 2005; Bybee 2003; Heine 2003; Lehmann 1993; Traugott and Heine 1991a; 1991b), though these tend not to be as explicitly defined as the variable context in VT studies.²

As empirical endeavours, both GT and VT have a commitment to counting. Where VT studies of grammaticalization distinguish themselves is by their adherence to the *principle of accountable reporting* (Labov 1972b: 72). This requires that an analysis consider not only the cases in which the form of interest materialized but also all the cases where it could have occurred even when it did not. This is because, as Gillian Sankoff (1990) already pointed out, it is misleading to conclude that use of one form entertains associations with a particular meaning or function

² This at least partly a result of the fact that so many grammaticalization studies are form-based, obviating the need to circumscribe a context (beyond the 10 or 100,000 words used to normalize token frequencies).

without also testing whether other forms do as well. This step is usually overlooked in reports of grammaticalization.

VT has the capacity to examine both the extent to which a given form, once selected, actually expresses a given function, and the extent to which it is associated with a given context. These measures need not be coterminous. For example, in their study of the grammaticalization of zero and other markers of past temporal reference in Nigerian Pidgin English, Poplack and Tagliamonte (1996) tested widespread claims (e.g. Bickerton 1984; Faraclas 1987) that the preverbal marker *bin* marks anterior/remote past in punctual verbs and simple past in stative verbs. Multivariate analysis (Rand and Sankoff 1990), the relevant parts of which are reproduced in Table 17.1, confirmed that while the probability that *bin* would be selected in anterior contexts was in fact very high relative to other contexts (.90), its absolute probability of occurring in that context (or any other) was extremely small.

Only once *bin* was situated with respect to the six other variants with which it competes (the cases where it ‘could have occurred but did not’), and the combined effect of frequency and probability of occurrence taken into account (the shaded columns in Table 17.1), could it be seen to be less likely to occur in this context than every other variant but one! Although other quantitative approaches would undoubtedly also have detected the overwhelming propensity of *bin* to express anteriority, a narrow form-based focus on the grammaticalizing form alone would have missed the crucial fact that anteriority was overwhelmingly *not* expressed by *bin*. Accountable analysis of usage data often turns up such surprises.

3.2.2. Operationalizing hypotheses

VT seeks to explain why, in a given context, one form is chosen over another to express the same meaning or function. The choice mechanism is the product of the aggregate of the contribution of environmental factors, which may conspire or conflict in the production of the form, plus a degree of inherent variability. This process is modelled by operationalizing and testing hypotheses about selection constraints as *factors* in a multivariate (or ‘variable rule’) analysis. To the extent that these hypotheses/factors are relevant to theories of grammaticalization, they enable us to assess key proposals about the mechanisms of this process. Thus, variationists have been quite successful in measuring such widely invoked parameters as unidirectionality, decategorialization, loss of constituency, phonetic erosion, syntactic fixation, unithood, semantic bleaching, and persistence, as well as others which (with some ingenuity) can be identified and, crucially, *operationalized* from the linguistic context.

To be sure, for many, grammaticalization is primarily a semantic process, involving notions like context-induced reinterpretation, pragmatic inferencing, conventionalization of implicature, and metaphorical and metonymic shifts, among others (Brinton and Traugott 2005; Bybee 2003; Bybee, Pagliuca, and Perkins 1994; Heine 2003; Heine, Claudi, and Hünemeyer 1991; Hopper and

Table 17.1. Twelve independent variable rule analyses of the contribution of temporal relationship to variant selection in Nigerian Pidgin English past temporal reference contexts (adapted from Poplack and Tagliamonte 1996)^a

	<i>kɔm</i>	<i>dɔn</i>	<i>bin</i>	<i>finiʃ</i>	<i>de</i>	zero
Corrected mean (Total N = 4,692)	.19	.07	.004	.012	.07	.57
<i>Temporal relationship</i>						
Anterior	.20	.76	.90	[]	.50	.62
Sequential	.70	.28	.21	[]	.40	.53
Non-anterior	.41	.65	.65	[]	.64	.51
<i>Range</i>	50	48	48		24	8

^a Values vary between 0 and 1; the higher the value, the greater the probability the variant in question (*kɔm*, *dɔn*, etc.) will be selected in each of the contexts listed on the left. Shaded columns display the combined effect of corrected mean and factor weight; this shows that the overall probability of occurrence in a context may differ greatly from the relative probability of occurrence (unshaded columns) compared to other contexts. Here and in subsequent tables, factors not selected as significant are indicated by [].

Traugott 2003; Traugott and König 1991; Sweetser 1990). For example, one common assumption is that forms are recruited to express and evaluate the grammatical relations the speaker *envisions*, in a process Traugott refers to as subjectification (Traugott 1982; Traugott and König 1991; Brinton and Traugott 2005). But despite growing interest in characterizing the semantic changes involved, there is as yet no real heuristic as to how they can be detected, let alone how they develop. Speaker intent or attitude and hearer inference are most often not directly recoverable from the available data. The VT commitment to operationalizing and testing hypotheses requires discovering objective criteria that can be applied to identify a given process in a systematic and, more important, replicable, way. This is an area that would benefit from increased dialogue between practitioners of GT and VT.

3.2.3. *Modelling variant choice*

Variable rule analysis helps determine if and how the choice process is affected by the factors constituting the environment in which the variants co-vary. Three lines of evidence contribute to measuring the extent of grammaticalization: the (statistical) significance of the effect, the magnitude of the effect, and the direction of the effect, or the ranking of constraints conditioning variant choice, the latter construed as the ‘grammar’ underlying the variable surface realizations. Together, they offer a snapshot of the structure of the system at a given period. By comparing these snapshots over time, we can trace not only the rise and fall of variant forms but also their entry points into the system and the trajectory of their functions, which is of particular interest to grammaticalization theorists. In its capacity to transcend frequencies to reveal the *patterns* of variability and change, this is perhaps where VT has the most to offer.

4. ELUCIDATING THE TRANSITION PERIOD: EXPRESSION OF THE FUTURE IN BRAZILIAN PORTUGUESE

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By way of illustration, consider the trajectory of the expression of future temporal reference in Brazilian Portuguese studied by Poplack and Malvar (2007). This constitutes a useful heuristic, both because it involves a paradigm example of this process cross-linguistically (the conversion of a *go*-verb into a future marker) and because the Portuguese periphrastic form (PF) figures among the most highly grammaticalized of *go*-futures studied, if only because it is virtually the only remaining exponent of future temporal reference available, at least in the spoken language.

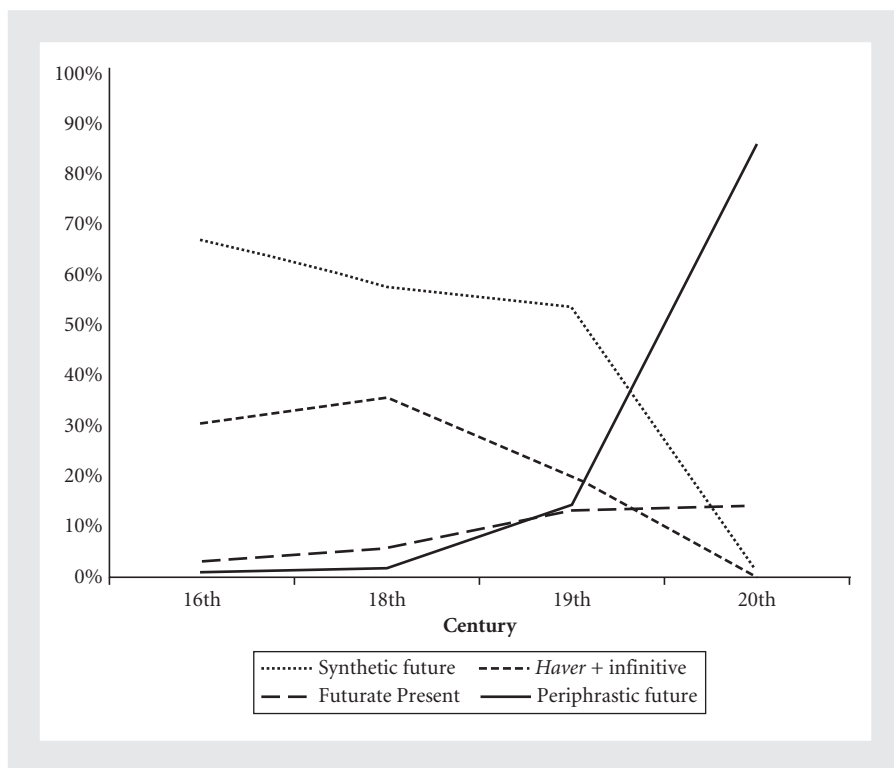


Fig. 17.1. Distribution of (Brazilian) Portuguese future temporal reference variants by century (adapted from Poplack and Malvar 2007)

Figure 17.1 shows that a system made up of a synthetic future (SF; *cantarei* ‘I will sing’) and the *haver*-periphrasis (HP; *hei de cantar*) in the 16th and 18th centuries³ was converted, by the 20th century, into one in which PF (*you* cantar) had virtually replaced all its competitors. Making use of the VT framework, Poplack and Malvar trace the transition between endpoints of this dramatic change, examining the state of the future temporal reference *sector* period by period by performing independent multivariate analyses of the factors contributing to variant selection in each. These are summarized in Table 17.2.

In Period I, the task of expressing future was largely divided between SF and HP. With a *corrected mean* (overall probability of occurrence) of .63, at this time SF was the majority and default variant. Consistent with this role, it was favoured in frequent, neutral or unmarked contexts (i.e. declarative affirmative sentences and with most lexical verbs), while HP mostly occurred elsewhere. Although the futurate present (P) was extremely rare at this time (corrected mean: .05), it had

³ Few pertinent data were available for the 17th century (Poplack and Malvar 2007).

Table 17.2. Twelve independent variable rule analyses of the factors contributing to selection of future temporal reference variants in (Brazilian) Portuguese, over three time periods (adapted from Poplack and Malvar 2007)

	Period I: 16th and 18th centuries				Period II: 19th century				Period III: 20th century			
	SF	HP	P	PF	SF	HP	P	PF	SF	HP	P	PF
Corrected mean	.63	.32	.05	—	.55	.21	.10	.15	—	—	.07	.93
Total N	367	194	29	8	268	104	48	72	4	0	47	611
<i>Sentence type</i>												
Declarative	.55	.44	[]	—	[]	[]	[]	.59	—	—	[]	[]
Negative	.37	.62	[]	—	[]	[]	[]	.10	—	—	[]	[]
Interrogative	.31	.70	[]	—	[]	[]	[]	.31	—	—	[]	[]
<i>Contingency</i>												
Contingent	.68	.30	[]	—	[]	.26	.85	[]	—	—	.87	.13
Assumed	.48	.52	[]	—	[]	.52	.47	[]	—	—	.45	.55
<i>Verb type</i>												
Non-motion	.54	[]	.37	—	.52	[]	.44	[]	—	—	[]	[]
Motion	.35	[]	.88	—	.31	[]	.87	[]	—	—	[]	[]
<i>Temporal distance</i>												
Distal	[]	[]	.36	—	.56	.54	[]	.36	—	—	[]	[]
Proximal	[]	[]	.71	—	.38	.40	[]	.79	—	—	[]	[]

(continued)

Table 17.2. Continued

	Period I: 16th and 18th centuries				Period II: 19th century				Period III: 20th century			
	SF	HP	P	PF	SF	HP	P	PF	SF	HP	P	PF
<i>Grammatical person/animate</i>												
1st animate	[]	[]	.70	—	[]	[]	[]	[]	—	—	[]	[]
2nd animate	[]	[]	.21	—	[]	[]	[]	[]	—	—	[]	[]
3rd animate	[]	[]	.39	—	[]	[]	[]	[]	—	—	[]	[]
3rd inanimate	[]	[]	.58	—	[]	[]	[]	[]	—	—	[]	[]
<i>Adverbial specification</i>												
Nonspecific	[]	[]	[]	—	.70	[]	.46	.15	—	—	.57	.43
No adverbial	[]	[]	[]	—	.46	[]	.45	.62	—	—	.42	.58
Specific	[]	[]	[]	—	.43	[]	.89	.27	—	—	.80	.20
<i>Factors not selected as significant</i>												
Sentence type			X	—	X	X	X		—	—	X	X
Contingency			X	—	X			X	—	—		
Verb type		X		—		X		X	—	—	X	X
Temporal distance	X	X		—			X		—	—	X	X
Grammatical person/animate	X	X		—	X	X	X	X	—	—	X	X
Adverbial specification	X	X	X	—		X			—	—		
Type of clause	X	X	X	—	X	X	X	X	—	—	X	X
Presence of clitics	X	X	X	—	X	X	X	X	—	—	X	X

already staked out its preferred loci of occurrence, the most important of which was with motion verbs, which favoured P highly (probability of .87).

By Period II, the emergent PF had increased substantially, now accounting for 15 per cent of the data. Like other *go*-periphrases, PF appears to have entered the system via proximate future contexts (.87), the former domain of P. This effectively relegated both the older SF and HP to a new context: distal future eventualities. Interestingly, considering that PF was still so rare, this was its only 'specialized' context of occurrence. Elsewhere, it was already showing harbingers of its current role as default future marker: it was preferred in the more frequent, less marked contexts of declarative sentences (which it usurped from SF), and those with no adverbial specification. Here it contrasted with both SF and P, associated with nonspecific and specific temporal adverbials respectively. Rates of P also doubled since the 16/18th centuries, but instead of spreading across the future temporal reference domain, it became more entrenched in the relatively infrequent, more specialized contexts of motion verbs, contingent contexts (*se* 'if' clauses) and specific adverbs, suggesting that it was still necessary to disambiguate its temporal reference.

By the 20th century, SF had receded dramatically (to 1 per cent of all future temporal reference), HP had disappeared, and PF had expanded into all the contexts formerly dominated by other variants, with the result that most of the factors once implicated in variant selection were no longer statistically significant. The only two barriers to the colonization by PF of the entire future reference sector are those in which P has remained entrenched: contingent contexts, and those modified by specific adverbs.

Focus on the variability inherent in the expression of future temporal reference shows how change comes about via a series of small adjustments made by both emergent and obsolescing variants. This change was driven by the gradual expropriation by the incoming PF of the preferred contexts of the older layers, culminating in the contemporary situation in which PF has become the default choice everywhere but in the remaining few bastions of P.

5. THE UNIVERSALITY OF GRAMMATICALIZATION PATHS

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The variationist apparatus can also be profitably applied to tracing grammaticalization paths cross-linguistically. Compare the evolution of the future temporal reference systems of two other closely related Romance languages, Spanish and

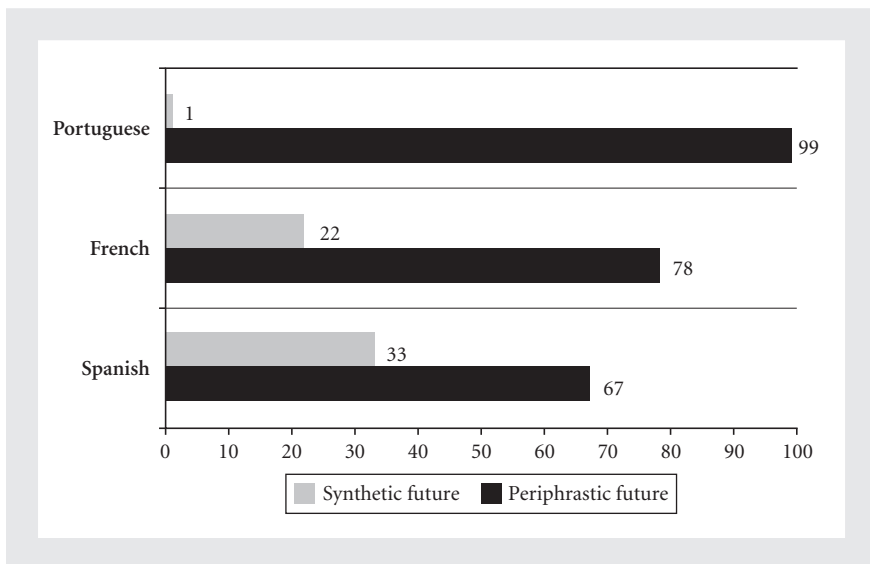


Fig. 17.2. Relative proportion (%) of synthetic to periphrastic future variants in three Romance languages (adapted from Aaron 2006, Poplack and Malvar 2007, Poplack and Dion 2009).

French. They share the same three major variants (SF, PF, and P), all inherited from the same (Vulgar Latin) source. In each, the majority variant, PF, coexists with older layers, but is gaining ground, albeit at different rates (Fig. 17.2).

Despite this discrepancy, given the prediction that grammaticalizing forms deriving from the same source (*a fortiori* the same source *material*) will follow the same course of change (e.g. Bybee et al. 1994; Brinton and Traugott 2005), the languages should display parallel, if not identical, grammaticalization paths. Fortunately, a series of replications of Poplack and Turpin's (1999) original study of French future temporal reference furnish comparable data and comparable analyses of the factors contributing to variant selection at the same two points in time. This affords a unique opportunity to assess this prediction empirically and, by extension, widespread claims for the universality of grammaticalization paths.

Table 17.3 displays six independent multivariate analyses of the factors contributing to the choice of PF in 19th- and 20th-century Spanish, French, and Portuguese. In 19th-century Spanish, two factors affected its selection. Most important is verb class; dynamic verbs (both motion and non-motion) favoured PF, with the exception of main verb *ir* 'go' (theoretically due to retention of its source lexical meaning; Bybee and Pagliuca 1987). The other is clause type, with subordinate clauses favouring PF. In Portuguese, neither of these factors was statistically significant. Instead, three other factors were operative: sentence type, temporal distance, and temporal specification: temporally unspecified declarative sentences

Table 17.3. Six independent variable rule analyses of the factors contributing to the choice of PF in three Romance languages, 19th and 20th centuries (adapted from Aaron 2006: table 5.45; Poplack and Turpin 1999: table 3; Poplack and Malvar 2007: tables 3, 4, and 6; and Poplack and Dion 2009: table 8)^a

	19th century			20th century		
	Sp.	Ptg.	Fr.	Sp.	Ptg.	Fr.
Input probability	.13	.15	.65	.69	.93	.73
Total N	75/ 507	72/ 492	2,630/ 4,293	768/ 1,147	611/ 662	2,627/ 3,357
<i>Verb class</i>						
Dynamic (non-motion)	.65	[]	[]	.58	[]	[]
Motion	.55	[]	[]	.53	[]	[]
Stative/percep./psych.	.32	[]	[]	.36	[]	[]
Range	33			22		
<i>Adverbial specification</i>						
No adverbial	[]	.62	.52	.57	.58	.56
Specific	[]	.27	.35	.42	.20	.23
Nonspecific	[]	.15		.22	.43	.19
Range		47	17	35	38	37
<i>Sentence type/polarity^b</i>						
Interrogative	[]	.31	.63	.49	[]	.65
Declarative	[]	.59			[]	
Negative	[]	.10	.01	.61		.01
Range		49	62	12		64
<i>Clause type</i>						
Subordinate	.63	[]	[]	[]	[]	[]
Main	.47	[]	[]	[]	[]	[]
Range	16					
<i>Temporal distance</i>						
Proximal	-	.79	.50	-	[]	.56
Distal	-	.36	.40	-	[]	.43
Range			43	10		13
<i>Speech style</i>						
Less formal	-	-	.51	-	-	.51
More formal	-	-	.36	-	-	.22
Range			15			29
<i>Contingency</i>						
Assumed	-	-	-	-	.55	[]
Contingent	-	-	-	-	.13	[]
Range					42	

^a Factor groups with the greatest magnitude of effect are shaded. Factors within each factor group most favourable to PF are bolded.

^b Aaron analysed sentence type separately. For ease of comparison, we present her figures for polarity.

with proximal future reference all favoured PF. This despite the fact that at the time, the relative frequency of PF was the same (15 per cent) in both languages! In French, PF had already advanced much further along the grammaticalization path, occurring in fully two-thirds of all future temporal reference contexts. Here, the strongest constraint on variant choice by far is polarity: PF appears to be favoured in affirmative contexts, actually the flipside of the effect whereby negative contexts were (and are) almost categorically retentive of SF (Poplack and Turpin 1999; Poplack and Dion 2009). The factor of polarity is not operative in either of the other two languages. Unexpectedly, the closely related Spanish and Portuguese share no effects, although two robust constraints favoring PF in 19th-century Portuguese are echoed weakly in French.

The contemporary situation, displayed in the rightmost columns of Table 17.3, shows even fewer cross-linguistic correspondences. Dynamic verbs continue to favour PF in Spanish, as, at this stage, do negative and interrogative sentences. In Portuguese, assumed contexts, and in French, affirmative sentences, appear favourable, but both effects stem from the entrenchment of another variant elsewhere. Contrary to received wisdom, in none of the languages does temporal distance affect choice of PF. The only effect common to all three languages is the propensity of PF to appear in temporally unspecified contexts, a finding consistent with Schwenter and Torres Cacoulos' (2008) demonstration that grammaticalization advances in temporally indeterminate contexts. If there is any candidate for a grammaticalization universal in this context, this would be it.

This cross-linguistic comparison suggests that the pathways by which *go*-verbs grammaticalize into future markers are not parallel, even in closely related languages. The discrepancies in trajectories are perhaps most striking in the case of French and Portuguese, which, despite what their disparate overall rates of PF imply, are at appreciably the same level on the cline of grammaticalization. This is because in both languages, the process has stalled, an outcome which the variationist method is equally capable of detecting. In French the only context blocking PF from taking over the whole future temporal reference domain is the near-categorical association of SF with negative polarity (Poplack and Turpin 1999; Poplack and Dion 2009).⁴ In Portuguese, barriers to the complete colonization of future temporal reference by PF are constituted by entrenchment of P in contingent and adverbially specified contexts and, inexplicably, with the motion verb *ir* 'go'. Despite the fact that it is basically the only variant remaining, PF remains (informally) inadmissible with main-verb *ir* (Poplack and Malvar 2007: 154). There is no restriction against PF co-occurring with *ir* in 20th-century Spanish (Aaron 2006), although grammaticalization is least advanced in that language, and lexical identity is not a factor in French either. This shows that the source meaning can persist

⁴ To be sure, Givón (1975) has characterized negative contexts as conservative. But why do they work this way only in French?

further into the grammaticalization process than previously assumed, raising the question of why only some languages (and some forms) are affected and not other similar ones.

6. DISCUSSION

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GT has offered great insights into change based on strong but testable hypotheses, and supported a number of them with revealing studies of shifts in rates and distributions of grammaticalizing forms. What VT adds is a principled way of examining not only the grammaticalizing form, but also the other layers with which it competes. Extending the focus to the entire variable context confirms that forms do not grammaticalize in isolation, but are sensitive to the variants with which they alternate. The trajectory of future temporal reference in Portuguese is a case in point. As PF increases in frequency, it—and its competitors—lose, transfer, and acquire constraints, mostly as a reaction to the activity in the remainder of the sector. Thus, accompanying shifts in token frequency are shifts in conditioning of variant choice. These represent differences not just in *degree* of grammaticalization but in the *contour* of the grammaticalization pathways.

This is exemplified most convincingly by cross-linguistic comparison of three languages featuring the same lexico-grammatical material derived from the same source. In each, the *go*-future is apparently well en route to sweeping the entire future temporal reference system, though synchronically they are at different points along the cline. The GT prediction is that cross-linguistic recruitment of grammatical expressions from the same lexical sources, coupled with the coexistence of older and newer forms, repeatedly give rise to similar kinds of polysemies (inferable from the conditioning of variant choice) cross-linguistically (e.g. Brinton and Traugott 2005: 29). This was not borne out.

Analysis of variation suggests a number of reasons. Old distribution patterns may persist, even into the most advanced stages of grammaticalization, although they sometimes yield opposing results. Thus the early association of Portuguese P with motion verbs resolved itself in contemporary speech by near-categorical *avoidance* of the *go*-future with main verb *ir*, while the Spanish *andar* ‘go around’ auxiliary continues to be favoured with the verbs compatible with its source meaning (Torres Cacoullós 1999). Barriers to grammaticalization may arise, and these may also differ according to language: the overwhelming association of SF with negative polarity contexts blocks PF from colonizing the entire French future temporal reference system, while the entrenchment of P in contingent and temporally specific contexts plays the same role in Brazilian Portuguese. This suggests that

with few exceptions, each language is following an independent trajectory to arrive at the same outcome, highlighting the risks of inferring grammaticalization paths from endpoints of change alone.

I have argued that VT is ideally suited to the study of grammaticalization in progress. Studying a form in its variable context allows us to distinguish evidence for a cross-linguistic grammaticalization path from effects that are reflexes of the forms with which it alternates in that context (Torres Cacoullos and Walker 2009b: 323–4; Poplack and Malvar 2007). The case of the Romance *go*-future shows that language-particular trajectories are contoured by variation with coexisting variants. More generally, VT provides the empirical tools necessary to scientifically test hypotheses central to GT, at least some of which enjoy the status of fact without the benefit of empirical proof.⁵ The results I have presented may not constitute sufficient cause to retract claims for the universality of grammaticalization paths, but they certainly sound a clarion call for further cross-linguistic research using accountable methodology such as that outlined here.

⁵ It also offers a check on promiscuous claims of grammaticalization, which have proliferated in the literature over the last decade.