

# 7 Variation and Grammaticalization

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## 1 Grammaticalization and the Neutralization-in-Discourse Hypothesis

Speech is characterized by form-function asymmetry, that is, variation among different constructions serving generally similar discourse functions (Labov 1969, 1972; Sankoff and Thibault 1981; Sankoff 1988a). This heterogeneity is structured, as shown in multivariate quantitative models of speaker choices among different forms, conditioned by both linguistic and extralinguistic factors (see Bentivoglio and Sedano this volume and Serrano this volume). For tense-aspect-mood expressions, a major source of the variation is grammaticalization, the diachronic process whereby grammatical constructions gradually develop out of discourse patterns (Bybee 2006: 719–721; Sankoff and Brown 1976).

Form-function asymmetry in present-day Spanish is illustrated by future temporal reference, which may be expressed by different constructions: the *IR a* 'go to' + Verb<sub>INF</sub> (periphrastic or analytical) Future (1a), the simple Present (1b), and the *-ré* (morphological or synthetic) Future (1c).

- (1) I: Y ¿este verano qué (a) *vas a hacer*? ¿Te (b) *vas de viaje* o te *quedas* aquí?  
R: Pues este verano me (c) *iré* a la playa [...] (Blas Arroyo 2008, Ex. 9)  
'I: And this summer what (a) *are you going to do*? (b) *Are you traveling* or *staying* here?  
R: Well this summer I'll *go* to the beach [...]'

Each of the two Future forms evolved from different source constructions. (We capitalize the first letter of language-specific forms to distinguish them from cross-linguistic functions (Comrie 1976: 10)). *Cantaré* (< *cantar he*), which replaced the Classical Latin *cantabo*, developed from the collocation of an Infinitive with a

Present tense form of *haber* 'have' and a meaning of obligation or predestination. The newer *voy a cantar* developed from the collocation of a Present tense form of *ir* 'go' plus *a* 'to' with an infinitive, meaning 'agent on a path toward a goal' (Company 2003: 40–41).

Diachronic grammaticalization paths for tense-aspect-mood expressions – stages of semantic development from a given source meaning (and parallel structural changes) – are strong cross-linguistic tendencies (Bybee, Perkins, and Pagliuca 1994). For example, grammaticalization paths for futures from constructions expressing agent-oriented modalities of obligation or desire and from purposive motion verb constructions recur across languages independently of genetic relatedness (Bybee and Pagliuca 1987; Heine and Kuteva 2002). Form-function asymmetry resulting from grammaticalization is known as "layering," the availability of different constructions to serve "similar or even identical functions" as newer layers emerge without displacing older ones within a functional domain (Hopper 1991: 22–24).

Frequency is integral in grammaticalization (Bybee 2003; Haiman 1994). The *ir a* + Verb<sub>inf</sub> construction has increased spectacularly in frequency, as indicated in Table 7.1. The middle columns show TOKEN (OR TEXT) FREQUENCY, which is the number of occurrences in a corpus of speech or writing, normalized per 100,000 words to facilitate comparisons across different-sized corpora. This rises from 4 in Old Spanish (thirteenth to fifteenth centuries) to over 100 in nineteenth- to twentieth-century texts. The last column in Table 7.1 shows RELATIVE FREQUENCY with respect to occurrences of *-ré*. This rises from less than 1% to a proportion of approximately one-fifth of the data (19%).

Grammaticalization, then, is the set of gradual semantic and structural processes whereby existing constructions with particular lexical items gain in frequency and become new grammatical constructions, following cross-linguistic evolutionary paths (e.g. Bybee and Hopper 2001; Company Company 2003; Givón 1979; Heine and Kuteva 2002; Traugott and Heine 1991).

The gradual changes in meaning (and form) occur in language use as speakers make choices between the newer grammaticalizing construction and an older expression serving generally similar discourse functions. The variationist hypothesis of NEUTRALIZATION-IN-DISOURSE states that while contexts can almost always be found in which different forms have different meanings, there are alternations in which the full accompaniment of semantic distinctions is not pertinent either for the speaker or the interlocutor (Sankoff 1988a). Sankoff (1988a: 153) proposed that neutralization of functional distinctions in discourse is the "fundamental discursive mechanism of [grammatical] variation and change."

In this chapter we review the application of the variationist method to the study of grammaticalization, focusing on variants in tense-aspect-mood domains. We begin with methodological imperatives in Section 2. In Section 3, we examine the development of the Progressive *estar* + Verb<sub>ndo</sub> as an aspectual construction by tracking changes in patterns of variation with the simple Present. We then consider what happens to older forms such as the *-ré* Future in face of the newer

**Table 7.1** Spanish *IR a + verb<sub>inf</sub>* and *-ré* Future: token and relative frequency in written texts over time (from Aaron 2006: Table 5.36).

Century (word count)	<i>IR a + Verb<sub>inf</sub></i>		<i>-ré</i> N	Tkn freq*		<i>IR a + Verb<sub>inf</sub></i> Rel freq
	N	Tkn freq*				
13–15th c. (311,000)	13	4	1828	588	592	<1%
17–18th c. (232,000)	59	25	1270	547	572	4%
19th–20th c. (150,500)	154	102	644	428	530	19%

\*Normalized per 100,000 words.

grammaticalizing construction, in Section 4. In Section 5, we use the variationist comparative method to identify dialect differences and elucidate grammaticalization paths, reviewing Present Perfect-Preterit variation along the perfect-to-perfective path.

## 2 The variationist method: circumscribing the envelope of variation and operationalizing hypotheses

The variationist contribution to the study of grammaticalization lies in tracking the patterns of variation between variants – constructions that appear to be “functionally similar” (Hopper 1991: 24), such as the *IR a + Verb<sub>inf</sub>* and *-ré* Futures. As Sankoff (1988a: 151) puts it, “the structure of variation and change is realized through recurrent choices being made by speakers.” In a usage-based approach, grammatical structure arises from language use, “emerg[ing] from the repetition of many local events” (Bybee 2006: 714).

The purpose of variationist studies is to discover patterns of language use – the patterns of speakers’ recurrent choices – in the relative frequency of co-occurrence of linguistic forms and elements of the linguistic context. Once we notice that one form seems to be replacing another over time or along some extralinguistic dimension (dialect, social group, situational context), the interpretative component of the analysis lies in identifying the similar discourse function(s) of the morphosyntactic alternatives. We then account for the selection of variants to fulfill a particular discourse function by exhaustively extracting each instance of that function from a corpus of speech (or writing) and applying quantitative techniques to determine the influences of contextual factors on the choice of form. These two methodological imperatives, defining the

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envelope of variation and operationalizing hypotheses as factors for multivariate analyses, distinguish variationist studies of grammaticalization.

The variationist method is distinguished from other approaches to the study of grammar that employ quantitative reasoning by the Labovian principle of accountability. The notion of the linguistic variable – two or more different expressions of a discourse-grammatical function – requires defining the ENVELOPE OF VARIATION, or variable context, which is the broadest environment in which speakers have a choice between different forms. The PRINCIPLE OF ACCOUNTABILITY states that reports of the occurrences of a variant must be accompanied by reports of all non-occurrences (Labov 2004). For example, to discover patterns of usage of *IR a + Verb<sub>inf</sub>*, we count tokens of this construction but also instances of future temporal reference where it is not used, that is, tokens of other future forms with which it alternates.

The empirical study of language change is not based on unverifiable intuitions about meaning differences or example-by-example ascriptions of speaker intentions (whether the examples are invented or extracted from a corpus), since speaker motivations in the choice of one form over another cannot be directly ascertained in a replicable manner. Rather, empirical tests of semantic differences rely on clues in the linguistic context at the moment of utterance (Sankoff 1988a: 154). These linguistic sub-contexts are represented as factors. Each token is coded for a series of factors for multivariate analysis.

By considering contextual features, these factors OPERATIONALIZE hypotheses about the choice of variants, testing meaning and other differences indirectly (cf. Poplack and Malvar 2007: 137–143; Poplack and Tagliamonte 1999: 321; Poplack and Turpin 1999: 145–146). For example, coding future tokens for co-occurring temporal adverbials provides a test for the hypothesis that *IR a + Verb<sub>inf</sub>* expresses more certainty than the *-ré Future*, reflecting its original “agent on a path toward a goal” meaning. The prediction following from this hypothesis is that “definite” adverbials such as *esta noche* ‘tonight’ which make reference to a specific time (2a) should favor choice of *IR a + Verb<sub>inf</sub>* more than “indefinite” adverbials such as *algún día/un día* “someday,” which have non-specific temporal reference (2b).

(2a) ... sí que me *voy a ir esta noche*. (Blas Arroyo 2008, Ex. 23)  
‘Yes I *am going to go tonight*.’

(2b) Yo sé que *algún día me voy a casar*. (Sedano 1994, Ex. 14a)  
‘I know that *one day I am going to get married*.’

Operationalizing hypotheses as factors allows us to propose a multivariate quantitative model of speaker choices between the variants. Grammatical structure is observable in the LINGUISTIC CONDITIONING of variant forms, that is, probabilistic statements about linguistic sub-contexts which differ significantly in the relative frequencies of the variants (Poplack and Tagliamonte 2001: 92). While increasing token and overall relative frequencies indicate advancing grammaticalization, this is accompanied by changes over time in the linguistic conditioning.

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locative or movement > progressive > general imperfective/present

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**Figure 7.1** Cross-linguistic imperfective/present grammaticalization path.

Source: Bybee, Joan, Revere Perkins, and William Pagliuca 1994, Chapter 3. *The evolution of grammar: tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.

### 3 Tracking change in linguistic conditioning: progressive grammaticalization

The Spanish Progressive, composed of *estar* 'be (located)' and a Gerund (-ndo), has developed from a locative, which gives the location of the subject, as in the fifteenth-century example in (3a), to a progressive construction, which expresses a verbal situation that is ongoing at speech time, as in the nineteenth-century example in (3b) (Torres Cacoullós 2000: 71–88). This follows the cross-linguistic imperfective grammaticalization path shown in Figure 7.1.

- (3a) unos *están en su casa folgando* (15th c., *Corbacho*, IV/I)  
'people *are in their home resting*'
- (3b) no parece que atiendes a lo que *estoy diciendo* (19th c., *Sí*, II/IV)  
'it doesn't seem that you are paying attention to what I *am saying*'

Together with semantic change the grammaticalizing construction undergoes parallel structural change. This is a change in constituency from a sequence of two independent parts (main verb *estar* with a gerund complement) to a periphrastic unit in which *estar* is an auxiliary and the gerund form is the main verb. Three measures of unithood emerge from changes in the distribution of the general *estar* + Verb<sub>-ndo</sub> construction (Torres Cacoullós 2000: 33–55):

- (i) adjacency: the increasing proportion of tokens without elements intervening between *estar* and the gerund (as in Ex. 3a above);
- (ii) association: the increased occurrence of one associated gerund with *estar* rather than two or more gerund complements (Ex. 4); and
- (iii) fusion: the increase in cases with object clitic pronouns placed before the emerging unit rather than attached to the gerund (Ex. 5) (cf. Myhill 1988).

- (4) E *estaua fablando* ante tod el pueblo & *falagando* los. (13th c., *Estoria de España* 74v)  
'And he *was speaking* before all the people and *flattering* them.'
- (5) se me figura que *está diziéndole* allá su corazón (15th c., *Celestina*, IV)  
'I can imagine that his heart *is telling him* there'

Table 7.2 shows increasing unithood on all three measures.

From the earliest appearance of the grammaticalizing construction, we find variation between the Progressive and the simple Present. This is illustrated in (6),

**Table 7.2** Grammaticalization of Progressive *estar* + *V-ndo* construction: unithood (from Bybee and Torres Cacoullos 2009: Table 4).

	13th c.	15th c.	17th c.	19th c.
Adjacency	36% (104)	50% (134)	67% (217)	78% (217)
Association	80% (104)	86% (134)	88% (217)	92% (217)
Fusion	63% (24)	50% (22)	82% (74)	70% (77)

Numbers within ( ) are Ns (tokens); % is proportion of tokens.

where both variants, the Progressive *está devaneando* "is raving" in (6a) and the simple Present *devanea* "raves" in (6b) express a situation in progress at speech time.

- (6a) *Está devaneando* entre sueños. (15th c., *Celestina*, VIII)  
'He *is raving* in his sleep'
- (6b) Hijo, déxala dezir, que *devanea*; (15th c., *Celestina*, IX)  
'Son, let her talk, she *is raving* [literally: raves]'

Torres Cacoullos (2009) considers data from three time periods, the twelfth to fifteenth (Old Spanish), seventeenth, and nineteenth centuries. Because of the low relative frequency of the Progressive (5% in sociolinguistic interview data (Cortes Torres 2005)), only a sample of the simple Present was taken, by extracting two tokens preceding and following each Progressive token and lexical types appearing in the Progressive. The envelope of variation (the discourse function served by both variants) was broadly defined as present temporal reference (cf. Walker 2001: 14–16). Occurrences of the simple Present with future or past reference were excluded as were more particular constructions that appeared invariably with the simple Present in the data, including modal periphrases (for example, *poder* 'can'-plus-Infinitive) and discourse routines in the first or second person, for example, *digo* 'I say,' *ya ve(s)* 'you see.'

Following the principle of accountability, all occurrences as well as non-occurrences, that is, each token of the Progressive or simple Present, were coded for a series of factors based on features of the linguistic contexts in which the variants occur. For given linguistic environments, or contextual features (factors), we predict an increase (favoring effect) or decrease (disfavoring effect) in the relative frequency of the Progressive with respect to the simple Present. The factors compose independent variables (factor groups).

*Co-occurring locatives* operationalize two complementary principles of grammaticalization. On the one hand, the principle of RETENTION (Bybee and Pagliuca 1987) or PERSISTENCE (Hopper 1991) states that the semantic content of grammatical expressions retains features of meaning derived from their lexical source construction. If progressive aspect originates in a locative construction (see Figure 7.1), the prediction is that co-occurring locatives, such as *allá* in (5) above, will favor choice of the Progressive over the simple Present. On the other hand, the principles of

SEMANTIC BLEACHING and SYNTACTIC GENERALIZATION describe the progressive loss of earlier meaning features as the contexts in which the grammaticalizing construction is used are generalized. The prediction is, then, that the favoring effect of locative co-occurrence should weaken over time.

*Aspect* (Comrie 1976: 3) was coded independently of the inherent dynamic or stative properties of the verb (Comrie 1976: 41) by distinguishing between extended and limited duration situations. "Extended duration" subsumes habitual aspect, which describes customarily repeated dynamic situations (cf. Comrie 1976: 27–28), as in (7a), and stative situations without temporal limits, which begin before speech time and continue indefinitely, as in (7b). In contrast, "limited duration" includes progressive actions occurring simultaneously with speech time (8a) and states circumscribed to a period near speech time (8b).

- (7a) cuando no han con quién hablar, *están hablando* consigo mismas entre sí (15th c., *Corbacho*, II, XII)  
'when they don't have anyone to talk to, they *talk* to themselves'
- (7b) tú, que *temes* más a un lagarto que a Él, sabes tanto (17th c., *Quijote II*, XX)  
'you, who *fears* a lizard more than Him, know so much'
- (8a) escucha, que *hablan* quedito (15th c., *Celestina*, XII)  
'listen, they *are speaking* softly'
- (8b) *estoy temiendo* que, entre la lengua y la garganta, se ha de atravesar el riguroso cordel que me amenaza (17th c., *Quijote II*, LXIII)  
'I *fear* [literally: am fearing] that the severe noose threatening me must tighten between my tongue and my throat'

In considering *polarity and mode*, we predict a disfavoring effect of negative polarity contexts, which may be conservative (cf. Givón 1979: 122, Pappas 2001: 83), and of interrogatives, which may have a higher proportion of conservative conventionalized collocations compared with affirmatives (cf. Torres Cacoullas and Walker 2009: 344). As illustrated in (9), questions about situations in progress tend to appear in the simple Present. These include frequent interrogative formulas such as *por qué lloras* 'why are you crying,' *de qué te ríes* 'what are you laughing at,' *qué sucede* 'what's happening.'

- (9) – Y aquella chica, ¿*qué hace*?  
– *Está desmenuzando* un bizcocho para dar de cenar a Don Periquito. (19th c., *Sí*, I/VI)  
'– And that girl, what *is* she *doing* [literally: does]?  
– She's *taking apart* a cookie to give Don Periquito his dinner.'

To determine the influences of these contextual factors on the choice of form, all of the factor groups were considered in Variable-rule analysis (Paolillo 2002; Sankoff 1988b; Tagliamonte 2006) using GoldVarb X (Sankoff, Tagliamonte, and Smith 2005). The goal of this kind of multivariate analysis is to discover the set of factor groups which jointly account for the largest amount of variation in a statistically significant way. Table 7.3 shows the results of three independent Variable rule



**Table 7.3** Factors contributing to the choice of the Progressive (*estar* + verb<sub>-ndo</sub>) over the simple Present (non-significant factors within [ ]).

	Old Spanish 119/745	17th century 180/1013	19th century 317/1460
<i>Total N</i>			
<i>Input*</i>	.16	.13	.17
<b>Aspect</b>			
Limited duration	.68	.72	.73
Extended duration	.36	.17	.15
<i>Range</i>	32	55	58
<b>Locative co-occurrence</b>			
Present	.77	.74	.62
Absent	.48	.48	.49
<i>Range</i>	29	26	13
<b>Polarity – mode</b>			
Affirmative declarative	.55	.57	.58
Negative, interrogative	.31	.21	.20
<i>Range</i>	24	36	38
<b>Temporal co-occurrence</b>			
Present	70	[.54]	[.57]
Absent	.47	[.49]	[.49]
<i>Range</i>	23		
<b>Stativity</b>			
Dynamic predicate	[.50]	.56	.58
Stative predicate	[.49]	.36	.32
<i>Range</i>		20	26

\*Since only a sample of the simple present was taken, the "input" here is not meaningful for comparisons across analyses.

analyses of the Old Spanish, seventeenth-century, and nineteenth-century data. Factor groups that contribute significantly to the choice of the Progressive over the simple Present are Aspect, Locative co-occurrence, Polarity-mode, Temporal co-occurrence, and Stativity (the latter two are not discussed here).

We are interested in two lines of evidence from the Variable-rule analyses shown in Table 7.3: the direction of effect and the strength of effect (cf. Tagliamonte 2006: 235–245). First, the DIRECTION of effect (or HIERARCHY OF CONSTRAINTS (Labov 1969: 742)) is instantiated in the order of the factors within a factor group from more to less favorable as indicated by the *Probability* or *Factor weights*: the closer to 1, the more likely, the closer to 0, the less likely that the Progressive will be chosen in the given environment. Second, relative MAGNITUDE of effect for the significant factor groups is indicated by the *Range*, which is the difference between the highest and lowest factor weight in the group.

In Old Spanish, the strong favoring effect of a co-occurring locative, which has the highest factor weight (.77), supports the hypothesis of the locative origins of the Spanish Progressive (Torres Cacoullós 1999: 38). An aspectual effect is already in place, with situations of limited duration favoring the Progressive (.68). However, the magnitude of the aspect effect is not greater than that of the locative factor group, as indicated by the close Ranges (32 vs. 29).

In the seventeenth century, while there is no change in the direction of effect – presence of locatives (.74) continues to favor selection of the Progressive more than absence of locatives (.48) – there are clear shifts in magnitude of effect. The locative factor group (Range = 26) is relegated to third position, behind polarity-mode (Range = 36). Aspect is evidently the most important linguistic feature in the variation, with a range which is one-and-a-half times greater than the next largest, that of the polarity-mode factor group (55:36 = 1.5). The Progressive is strongly disfavored in extended duration contexts (.17).

In the nineteenth century, the hierarchy of constraints remains intact with co-occurring locatives still favoring the Progressive (.62), but locative co-occurrence has dropped to fourth position (Range = 13). Aspect continues to be the most important consideration (Range = 58, one-and-a-half times greater than that of polarity-mode) and now the highest factor weight is that of limited duration (.73).

The multivariate analyses thus reveal changes in the configuration of factors contributing to variant choice. The effect of locative co-occurrence, which operationalizes retention from the locative origins of the construction, while maintaining the direction of effect, weakens over time, as predicted: semantic bleaching of a construction and concomitant generalization of the contexts in which it is used is exactly what we expect in grammaticalization (Bybee, Perkins, and Pagliuca 1994: 6). What the multivariate analyses reveal is that as locative meaning weakens, aspectual meaning strengthens. The changing relative magnitude of the factor groups (the rising aspect effect) indicates the gradual emergence of an aspectual opposition: the Progressive increasingly expresses progressive aspect in contrast to the habitual meaning of the simple Present. Thus, in the course of speakers' recurrent choices in discourse between functionally overlapping variant constructions, the constructions themselves evolve, developing different functions (Torres Cacoullós 2009).

#### 4 Older constructions in the face of variation with newer constructions

In the previous section, changes in the linguistic conditioning of the Progressive and simple Present showed the evolution of the grammaticalizing construction from a locative to an expression of progressive aspect. Variation and grammaticalization also affects the older construction, sometimes creating zero morphemes (García and van Putte 1989).

Grammaticalizing constructions may become obligatory. In English, ongoing dynamic situations are expressed by *be* + Verb<sub>-ing</sub>, for example *Right now I am*

*drinking a cup of decaf* = action simultaneous with moment of speech (Bybee 1994: 239). As Bybee (1994) argues, a consequence of the development of the Present Progressive as an obligatory expression of progressive aspect is restriction of the zero-marked simple Present to habitual and generic uses, thus *I drink decaf* = habitual choice of coffee. Cross-linguistically, when a morpheme takes over progressive territory (see Figure 7.1) the erstwhile general present form is left with a default present habitual meaning (Bybee, Perkins, and Pagliuca 1994: 151). In Spanish, while *estar* + Verb-<sub>ndo</sub> is not quite an obligatory progressive, the simple Present is more associated with stative and habitual meaning than perhaps is acknowledged by reference grammars, its progressive uses increasingly restricted to negative polarity and interrogative contexts (Torres Cacoullós 2008).

An example of what Company Company (2003: 35–36) calls “refuncionalización” is the evolution of *cantara* from a (Pluperfect) Indicative in Latin to a (Past) Subjunctive in Spanish. The semantic change may be viewed as one of temporal reference, from past-before-past (past perfect) to past, and one of modality, from assertion to lack of assertion (Klein-Andreu 1991; cf. Terrell and Hooper 1974). *-ra*'s earlier assertive past perfect uses have been taken over by the Pluperfect *había cantado*. The grammaticalization of this newer construction and the relegation of *-ra* to non-assertive uses are related, as suggested by Klein-Andreu's (1991) study of variation in the fourteenth-century *Conde Lucanor*, in which both constructions are used with assertive past-before-past meaning, as in (10).

- (10) vien sabía él que el rey le *avía criado* [...] et quel *serviera* muy bien (Lucanor, I)  
'he knew very well that the king *had raised* him [...] and that he *had served* him very well'

Klein-Andreu (1991) hypothesizes that the difference lies in degrees of “focus,” the newer Pluperfect expressing foregrounded material, or that which “supplies the main points of the discourse” (Hopper and Thompson 1980: 280). Focus is operationalized by considering properties of the verb, the participants, and the syntactic environment. High focus is associated with transitive events, animate subjects and objects, and appearance as the first in a sequence of coordinated events, while low focus is indicated by stative predicates, negation, and occurrence in a relative clause. An additional measure relies on the literary structure of the work, with the “outer story” presenting the Conde's dilemma being of high focus in relation to his servant's didactic “inner story.” Finding the predicted association between these features and the variants, Klein-Andreu (1991) concludes that “low focus” is an intermediate stage in the semantic development of *-ra* from more assertive (Indicative) to less assertive (Subjunctive).

Variation in the expression of future temporal reference similarly results in the retreat of the older variant *-ré* to non-assertive use as it changes in category from tense to mood in some uses (while still functioning as a future in others). As mentioned earlier, both Futures have arisen through grammaticalization, *IR a* + Verb<sub>inf</sub> from a purposive motion construction (“agent on a path toward a goal”) and *-ré* originating in a modal construction (obligation or predestination).

**Table 7.4** Factors contributing to the choice of *IR a + verb<sub>inf</sub>* over the *-r  Future* (non-significant factors within [ ] ) (from Aaron 2006: Table 5.45).\*

	17th c.	19th c.	20th c.	20th c. spoken
Total N	59/1329	75/507	79/291	768/1147
Input	.03	.13	.25	.69
<b>Verb class</b>				
Dynamic (non-motion)	.62	.65	.59	.58
Motion	.74	.55	.60	.53
Stative/perception/psychol.	.33	.32	.34	.36
Range	41	33	26	22
<b>Temporal adverbial modification</b>				
Absent	.56	[.52]	.56	.57
Present	.22			
– Definite		[.58]	.38	.42
– Indefinite		[.33]	.31	.22
Range	34		25	35
<b>Sentence type</b>				
Interrogative	[.62]	[.52]	.73	.78
Declarative	[.49]	[.50]	.48	.46
Range		25	32	
<b>Polarity</b>				
Affirmative	.55	[.52]	[.52]	.49
Negative	.24	[.36]	[.38]	.61
Range	31			12

\*Also included in analyses: clause type, significant in 19th c. (subordinate .63, main .47).

Aaron (2006) tracks changes in the linguistic conditioning *within* future temporal reference, as shown in Table 7.4.

Note that the “input,” which indicates the overall likelihood that *IR a + Verb<sub>inf</sub>* will be chosen, has increased dramatically from .03 in seventeenth-century texts to .69 in twentieth-century spoken data. This confirms that the newer variant has rapidly increased in relative frequency while the older *-r  Future* has become the minority variant. The direction of effect (hierarchy of constraints) has mostly remained stable: *IR a + Verb<sub>inf</sub>* is consistently favored:

- more by dynamic predicates than by stative, perception, and psychological verbs, consistent with retention from its allative motion origins (see, e.g. Hopper and Traugott 2003: 68);
- more by the absence of adverbial modification, less so by definite temporal expressions, and least by co-occurring indefinite adverbials (see examples in (2) above);
- and (increasingly) more by interrogatives than by declaratives.

However, we note shifts in magnitude of effect. On the one hand, weakening over time, in addition to polarity (*IR a + Verb<sub>inf</sub>* is initially disfavored under negation), is verb class, which has the highest range in the seventeenth and nineteenth but not the twentieth century. This is as predicted by the grammaticalization principles of semantic bleaching and syntactic generalization. On the other hand, the strengthening of the temporal adverbial and sentence type factor groups may be related to non-future epistemic uses of *-ré*, as in (11).

- (11) ¿por qué *tendrá* tan pocas horas el día? (Aaron 2006, Ex. 3.82)  
'why *might* the day *have* so few hours?'

Examining the distribution of *-ré* outside the envelope of future variation, Aaron (2006) shows that epistemic uses of *-ré* occur disproportionately precisely with stative verbs, in interrogative contexts, and in the absence of temporal adverbial modification. Thus, changes in the linguistic conditioning of future expressions may reflect the increasing non-future epistemic use of these "future" forms (cf. Sedano 1994: 234, Silva Corvalán and Terrell 1989: 207). Such a development is predicted by cross-linguistic pathways of agent-oriented modalities, which may feed into epistemic moods expressing possibility and probability (Bybee, Perkins, and Pagliuca 1994: 240).

## 5 Dialect differentiation and grammaticalization

Language change may be reflected synchronically in dialect differentiation (Sankoff 1988a: 147). In particular, dialect differences may reflect different degrees of grammaticalization or even different grammaticalization paths (Silva-Corvalán 2001: 16; cf. Company Company 2002; Poplack and Tagliamonte 1999; Torres Cacoulios 2005).

A well-known locus of dialect differentiation in Spanish is the Present Perfect *he cantado*, whose token frequency and frequency relative to the Preterit is higher in Peninsular (Spain) than in Mexican varieties. Using the variationist comparative method (Poplack and Tagliamonte 2001), Schwenter and Torres Cacoulios (2008) compare the linguistic conditioning of the Present Perfect in order to pinpoint dialect differences.

Following the grammaticalization path depicted in Figure 7.2, the periphrastic "have" plus Past Participle construction has evolved from perfect to perfective aspect in several Romance languages, for example, the *Passé Composé* in French (e.g. Heine and Kuteva 2002: 232). In typological studies, perfect aspect signals a past situation that is viewed as currently relevant, or related to the discourse at speech time, whereas perfective aspect conveys strictly that the situation is viewed as bounded temporally; thus, perfective is used for narrating sequences of discrete events in the past (e.g. Fleischman 1983; Hopper 1979; on prototypical uses or types of perfect, see Comrie 1976: 56–61; Dahl 1985: 132).

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'be', 'have' + Past Participle > resultative > perfect > perfective / general past

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**Figure 7.2** Cross-linguistic perfective/past grammaticalization path.

Source: Bybee, Joan, Revere Perkins, and William Pagliuca, 1994, Chapter 5. *The evolution of grammar: tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.

Variation between the Present Perfect and the Preterit is illustrated in (12), with the temporal adverbial expression *esta mañana* 'this morning.' In Peninsular varieties, the Present Perfect has been found to function as a hodiernal ('today') perfective, overwhelmingly chosen over the Preterit to indicate past situations that occurred over the "today" of speech time (as in Ex. 12) (Schwenter 1994; Serrano 1994). However, the Peninsular Present Perfect also has prototypical perfect uses, as in (13), where *mira* 'look' indicates the result of a past situation that is visible to the interlocutors, which is presumably of current relevance. Thus, there is variation both among different forms and within forms, with a single form covering different meanings (stages) along its grammaticalization path, as predicted by the principle of retention (Bybee, Perkins, and Pagliuca 1994: 16).

- (12) *Lo escuché esta mañana, lo he escuchado esta mañana* (COREC, CCON028A)  
'I heard (Preterit) it this morning, I heard (Present Perfect) it this morning.'
- (13) *Mira, la han puesto a Vanesa aparato*. (COREC, CCON018C)  
'Look, they have put (PP) braces on Vanesa.'

Since in the data considered both variants apparently have perfect as well as perfective uses, we adopt a grammaticalization-path approach to the envelope of variation (Torres Cacoullous 2001). The variable context is form-based, in that we count occurrences of the grammaticalizing construction (Present Perfect) and of the morphosyntactic alternative it is replacing (Preterit). It is function-based, in that the similar discourse-grammatical function expressed by these variants is more properly a set of diachronically related functions along a grammaticalization path (the set of aspectual meanings along the perfect-to-perfective grammaticalization path (Figure 7.2)).

Rather than relying on the empirically intractable notion of current relevance, the analysis is based on a factor group of temporal reference. This includes temporal distance distinctions, that is, hodiernal ("today," as in (12)) and pre-hodiernal ("before today") past situations (14). However, there are also past situations for which temporal distance is irrelevant (15). And in about one-third of the cases, temporal reference is indeterminate, as in (16), where the analyst and possibly the interlocutor cannot resolve temporal distance. One could ask *when?* (when did you give the car to your daughter?, when did you buy one for your grandson?), unlike with "irrelevant" temporal reference, but apparently temporal reference does not need to be specified for the speaker's discursive purposes (Schwenter and Torres Cacoullous 2008: 18–19, 31–32).

<u>Factor Group</u>	<u>Mexican</u>	<u>Direction of effect</u>	<u>Peninsular</u>
Temporal reference	Significant	<i>Different</i>	Significant
Temp adv co-occurrence	Significant	<i>Same</i>	Significant
Noun number	Significant	<i>Same</i>	Significant
Ya co-occurrence	Not significant	<i>Different</i>	Significant
Sentence-clause type	Significant	–	Not significant
Aktionsart	Significant	–	Not significant

**Figure 7.3** Present Perfect-Preterit variation.

Source: Schwenter, Scott A. and Rena Torres Cacoulllos. 2008, Figure 4. Defaults and indeterminacy in temporal grammaticalization: the 'perfect' road to perfective. *Language Variation and Change* 20. 1–39.

- (14) ayer *he comprado* un aire acondicionado y me da calor (COREC, BCON014B)  
'yesterday I *bought* an air conditioner and I'm getting heat [from it]'
- (15) Hay gente que se muere con noventa años y nunca *ha madurado* (COREC, BCON014D)  
'There are people who die at ninety years old and they never *have matured*'
- (16) con papá no montaban más en el coche porque no, se lo *regalé* a mi hija y no he cogido el coche, ahora le he comprado [...] y ahora le *he comprado* a mi nieto uno. (COREC, CCON004C)  
'they wouldn't get in the car with dad anymore because they wouldn't, I *gave* it to my daughter and I haven't taken the car, now I've bought [...] and now I (*have*) *bought* one for my grandson.'

The variationist comparative method (Poplack and Tagliamonte 2001; Sankoff, Poplack, and Vanniarajan 1990; Tagliamonte 2002) involves comparing independent multivariate analyses that include the same factor groups. Figure 7.3 summarizes the comparison of significance and direction of effect of factor groups from Variable-rule analyses for each dialect. The two dialects evidently have shared linguistic conditioning with respect to some factor groups, but diverge and even contrast with respect to others.

First, temporal adverbial co-occurrence and noun number are significant in both varieties and show the same direction of effect. Choice of the Present Perfect is favored by co-occurring proximate (such as *esta semana* 'this week') and frequency adverbials (such as *muchas veces* 'many times') and plural direct objects (as in *he oído canciones tuyas* 'I have heard songs of yours'). These contextual features may reflect repeated occurrence and linking to the present, congruent with perfect meaning. This *shared* linguistic conditioning indicates that the Present Perfect in Peninsular Spanish retains diachronically older perfect functions, as predicted by the grammaticalization principle of retention.

Second, Aktionsart and sentence-clause type are significant in the Mexican analysis. The disfavoring effect of punctual predicates (such as *llegar*; Achievements in the Vendlerian classification) indicates aspectual restrictions on the Present Perfect, while the favoring effect of yes-no interrogatives, which are non-assertive contexts and less temporally anchored than Wh (who-what-when-where-why) interrogatives,

**Table 7.5** Temporal reference in the choice of the Perfect over the Preterit (from Schwenter and Torres Cacoullous 2008).\*

	<i>Mexican</i>		<i>Peninsular</i>	
<i>Total N</i>	331/2234		956/1783	
<i>Input</i>	.06 (15%)		.61 (54%)	
Irrelevant	.94	59%	.94	96%
Indeterminate	.76	20%	.65	73%
Specific	.17	1%		
Hodiernal		10%	.93	96%
Prehodiernal		0	.13	16%

\*Other factor groups in analyses: temporal adverbial, noun number, *ya* co-occurrence, sentence-clause type, Aktionsart.

is compatible with perfect uses (cf. Dahl 1985: 143; Schwenter 1994: 89–90). Neither of these factors has any discernible effect in the Peninsular data. This *divergence* in linguistic conditioning indicates bleaching and generalization of the Present Perfect in Peninsular Spanish.

Third, two factor groups present *contrasting* patterns, *ya* co-occurrence (which favors the Present Perfect in Peninsular) and temporal reference. We focus here on the hierarchy of constraints in temporal reference, the factor group with the largest Range by far in both analyses, shown in Table 7.5. In Mexico, where it is the minority variant overall (Input = .06), the Present Perfect is most strongly favored in irrelevant temporal reference contexts (.94) and most disfavored by specific temporal reference, hodiernal and prehodiernal (.17) (combined in this analysis because there were no prehodiernal Perfect occurrences). This is consonant with perfects' relational, link-to-present meaning. In the Peninsular data, where the Present Perfect has achieved majority status (Input = .61), irrelevant temporal reference remains a highly favorable context (.94), as the principle of retention would predict. But rather than a specific past temporal *reference* effect, there is a temporal *distance* effect such that the Present Perfect is near categorical in hodiernal temporal contexts (.93) while in prehodiernal contexts speakers use the Preterit overwhelmingly (.13). This confirms conventionalization as a hodiernal perfective. Thus, the Peninsular Present Perfect is further along the grammaticalization path: while it retains canonical perfect functions, it has generalized to perfective functions and is now the majority variant in all temporal reference contexts except for prehodiernal.

The multivariate analyses also suggest a somewhat different route for perfect to perfective grammaticalization than one through remoteness distinctions. A widely held hypothesis is that the shift from perfect to general past perfective proceeds via "gradual relaxation of the degree of recentness required for the use of the



**Table 7.6** Temporal reference in the choice of the Perfect over the Preterit in Peninsular plays (from Copple 2009: Table 5.18).\*

	15th c.		17th c.	19th c.
Total N**	314/628		775/1546	733/1502
Input	.58		.40	.45
<b>Temporal reference</b>				
Immediately Preceding	.61	Irrelevant	.83	.83
Irrelevant	.54	Immediately Preceding	.74	.75
Indeterminate	.47	Indeterminate	.61	.64
Hodiernal	.20	Hodiernal	.42	.54
[Prehodiernal]	0	Prehodiernal	.02	.09

\*Other factor groups in analyses: subject expression, Aktionsart, sentence-clause type, *ya* co-occurrence.

\*\*15th and 17th c. total N based on sample of the Preterit.

Perfect" until it becomes "purely past" (Comrie 1976: 61). But a finer-grained analysis uncovered no difference in Present Perfect rate between hesternal (yesterday) and prehesternal (before yesterday) contexts, nor between more proximate "the other day" and more distant "last year" contexts. Instead, the shift from hodiernal to general perfective appears to be advancing in temporally indeterminate past contexts, which are perfective, but not temporally specified. The perfect route to perfective may be via such contexts precisely due to their lack of temporal anchoring.

Diachronic study supports the hypothesis that use in non-specified temporal contexts promotes Present Perfect grammaticalization. Copple (2009) examines temporal reference effects in Peninsular plays, in which frequency relative to the Preterit increases from 26% (314/1231) in the fifteenth century, to 37% (775/2109) in the seventeenth, to 49% (733/1502) in the nineteenth century (Table 7.6).

Copple (2009) interprets temporal reference effects in conjunction with distributions by semantic classes of verbs. Fifteenth-century patterns are consonant with emerging perfect uses, as the extension of the Present Perfect to irrelevant and indeterminate temporal reference contexts is concentrated in verb classes associated with resultative uses (see Figure 7.2, above). With increasing relative frequency overall, the Present Perfect is conventionalized as a perfect by the seventeenth century, where it has generalized to irrelevant temporal reference contexts – now the most favorable – across verb classes. The construction is also favored in temporally indeterminate contexts. In the nineteenth-century data, in which the Present Perfect is as frequent as the Preterit, generalization to perfective includes temporally specified hodiernal contexts, which come to favor choice of the Present

Perfect. Coppie (2009) concludes that use in temporally indeterminate contexts contributes to bleaching of "current relevance" and strengthens the association of the Present Perfect with perfectivity. More studies will tell whether indeterminate reference is a locus of change in temporal systems more generally.

## 6 Conclusion

The variationist method is well suited to the examination of grammaticalization in progress. By operationalizing grammaticalization hypotheses and proposing multivariate quantitative models of speaker choices among different constructions, we have shown that retention (persistence) of earlier meaning features and generalization along grammaticalization paths are manifested in co-occurrence constraints (e.g. Poplack and Tagliamonte 1999; Torres Cacoulios 1999: 29–32). Changes in the meaning (and form) of grammaticalizing constructions occur gradually in language use, as speakers make choices among forms serving generally similar discourse functions.

Future research can examine the relationship between frequency increases and changes in the linguistic conditioning of grammaticalizing constructions. Another emerging issue is lexical effects and the role of particular constructions (collocations) in variation and grammaticalization (e.g. Bybee and Torres Cacoulios 2009; Poplack 2001; Torres Cacoulios 2001; and Torres Cacoulios and Walker 2009). Beyond tense-aspect-mood domains, a diachronic grammaticalization perspective can help elucidate other morphosyntactic variables of interest to sociolinguists. Finally, insights from grammaticalization in conjunction with the comparative variationist method can be further applied to the intriguing similarities and differences between the many varieties of Spanish around the world.

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