

ABSTRACT

CALLAHAN, ERIN ELIZABETH. "Accommodation Without Assimilation:" Past Tense Unmarking and Peak Accent Alignment in Hispanic English. (Under the direction of Walt Wolfram.)

This thesis will examine an emerging dialect of North Carolina Hispanic English in terms two sociolinguistic variables which illuminate the internal dynamics of the variety's sound and structure schema: the grammatical variable of past tense unmarking, and the intonational variable of pitch accent timing. It is hoped that these empirical investigations will inform broader questions of the nature of interlanguage variability as a learner variety evolves into a stable ethnic dialect.

Using standard sociolinguistic types variable rule analysis including GOLDVARB, will first attempt to account for patterns of past tense unmarking— manifest as consonant cluster reduction— in the speech of a group of Hispanic English speakers in one Durham elementary school and two middle schools. Next, it will compare the variation in Durham Hispanic English at increasing lengths of residency to the generational varieties of Hispanic English in a comparison sample spoken by a longstanding Hispanic community in south Texas. In this way, the thesis tests the hypothesis that interlanguage (socio)linguistic development may in fact recapitulate generational changes, a theory of systemic heterochrony which has its roots in evolutionary biology (Haeckel 1899).

Results indicate that for the speakers in this study, -t/d variable spells out not only the constraints of the phonological process of deletion, but two morphosyntactic constraints: 1. the effects of verb class and 2. a grammatical process of past tense unmarking. These three distinct sound and structure processes converge to create an additive effect whereby past tense forms may

be variably unmarked in the Hispanic English for speakers in two communities studied, in Texas and North Carolina. To some degree, these constraints show patterns across space and time which are projections of a unitary phenomenon—that is, ontogenic sequence of interlanguage structures may well provide a roadmap for language change over time.

In its second section, this study compares the nuclear peak alignment patterns of the pitch accent gestures in two varieties of Hispanic English (HE) and US Spanish to the analogous gestures in both “substratal” Mexican Spanish, a local variety of African American English and Southern White Vernacular English. Significant differences in alignment patterns are found between Texas and North Carolina for both English and Spanish varieties, with the longstanding Texas community still aligning with national varieties of Mexican Spanish. Thus, for the data in this study, geography seems to constrain peak accent alignment more consistently than ethnicity.

“Accommodation Without Assimilation:” Past Tense Unmarking and Peak Accent
Alignment in Hispanic English

by
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A thesis submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the Degree of
Master of Science

English

Raleigh, North Carolina
2008

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BIOGRAPHY

Erin Elizabeth Callahan first studied linguistics at Yale University, when she did fieldwork in the French West Indies on Guadeloupe Creole. She graduated in 2000, and moved back to her home state of North Carolina, where she taught French, Spanish, and ESL in Durham and Granville County Public Schools. She worked at a bilingual school in Querétaro, Mexico, during 2006-2007, before returning to graduate school at NC State. She has worked variously as a waitress, library clerk, secretary, journalist, and on the kitchen staff at Canyon Village in Yellowstone National Park. She lives with her partner and their two dogs, Benny and Fifo, in Durham, NC (the best city in the world).

ACKNOWLEDGEMENTS

Being part of NCLLP has given me a sense of purpose and intellectual excitement for which I am incredibly grateful. Maybe more importantly, I have met some of the most wonderful, warm, and hardworking people I know: Walt Wolfram, Erik Thomas, Agnes Bolonyai, Robin Dodsworth, Mary Kohn, Danica Cullinan, Stephany Dunstan, Leah White, Tyler Kendall, and Charlotte Vaughn. Thanks also go to Julie Tetel, Julie McGory, Edna Andrews, Timothy Face, and Pilar Prieto for early comments on this draft. I appreciate the excellent logistical help and friendship of Karina Vazquez Zazueta and her family in Los Mochis, Mexico. I am honored by the reception I received from Alice Anne Kern, Mary Holt, Daniel Isenberg, and Sashi Rayasam, and thank them for trusting their students with a bunch of strangers with tape recorders. Finally, the most thanks of all go to person I'm luckiest to have found in the world: Alissa Jo Price: *je t'aime*.

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1. Introduction

The study of variation and change in southeastern U.S. varieties of Hispanic English provides researchers with a unique view of an ethnic dialect in its earliest stages of formation. Since the more than 500% increase in in-migration to the North Carolina by Hispanic immigrants between 1990 and 2000— accounting for 27.5% of total state population growth— students from Spanish-speaking countries account for over half of the total enrollment growth in North Carolina Public Schools. By 2004, the Hispanic population in North Carolina totaled 600,913, or 7% of the state’s total population (Kasarda & Johnson 2006).

Using statistical methods such as variable rule analysis (Rousseau and Sankoff 1978), this thesis will first attempt to account for patterns of interlanguage variation in the speech of a group of Hispanic English speakers, in one Durham elementary school and two middle schools, who have lived in the U.S. from two to sixteen years. Next, it will compare the variation in Durham Hispanic English at increasing lengths of residency to the generational varieties of Tejano English in a comparison sample spoken by a longstanding Hispanic community in south Texas.

The yardsticks used to measure both intra-variety (in terms of L1 proficiency or generational “cells”) and extra-variety (in terms of divergence from local varieties of English) development are the structural (syntactic) sound (intonational) variables listed below:

1. *Past tense unmarking*: the occurrence of verb forms which are 0-marked in past-tense contexts where standard varieties of English use simple past forms:

a. [*As a young woman*] *I hang all the clothes on the line* [MP/ptx0030]¹

b. [*During that time*] *they grind [the ‘masa’]* [ET/ptx001]

2. *Nuclear peak accent alignment*: occurrence of F0 maxima (contained in a nuclear pitch accent) relative to the temporal bounds of the stressed syllable: this gesture may be relatively “on time” or “delayed” between and within languages, e.g. Mexican Spanish peaks are “late” as compared to Standard (and most non-standard) English peaks.

By examining trends in the two variable structures above, we test the hypothesis that interlanguage (socio)linguistic development may in fact recapitulate generational changes, a theory of systemic heterochrony which has its roots in evolutionary biology (Haeckel 1899).

1.1 Allometry, Interlanguage, and Diachronous Change

Within his original conception of the interlanguage model (1972), Selinker first proposed that the speech of the second language learner is, instead of being composed of a series of errors or deviations from a correct standard, in fact a rule-governed system that “begins at the beginning whenever one attempts to express meaning in the target language.” (Selinker 1992 p. 31)

Phrased this way, it is easy to see how the interlanguage paradigm, originally conceived within second language acquisition studies, resonates with the set of

¹ Interview designations come from conventions followed in the North Carolina Sociolinguistic Archive & Analysis Project, available at <http://ncslaap.lib.ncsu.edu/>, developed by Kendall (2007)

traditionally variationist assumptions in the Labovian paradigm (cf. Labov 1972; Wolfram and Fasold 1974).

This quantitative, variationist method of analysis was first used by L. Dickerson (1974) and W. Dickerson (1976), who, notably for the argument in this paper, drew the following conclusions regarding interlanguage development and generational language change:

...that two variationist rubrics could be applied to SLA data: 1) the linguistic environment is a predictor of variable occurrence, and 2) longitudinal (or apparent-time) treatment of data reveals the progress of linguistic change (in SLA, in the individual rather than in the system, although it may also be shown that such changes in 'like' individuals are systematic; that is, there is shared interlanguage development. (Preston 1996 p. 8)

Accordingly, Adamson (1988), pointing to the existence of language universals and implicational hierarchies in interlanguage, also implies that not only is the variationist rubric appropriate for examining interlanguage variation at one point in time, but over many:

...language acquisition researchers have used implication hierarchies in one form or another to display interlanguage patterns. These implicational hierarchies claim that interlanguage structures can be arranged along a continuum so that learners will first use structure *x*, then structure *y*, and so on. A hierarchical arrangement of

interlanguage structures forms a continuum ranging from simple to complex...
(1992 p. 9)

Though I will not argue in terms of (older) implicational hierarchies or variable rules (or, for that matter, “simple” vs. “complex” structures), my argument follows the lines of Adamson’s continuum model, and echoes Major’s (1987) Ontogeny Model, which predicts strong transfer effects in the early stages of SLA, overcome by the sway of more cross-linguistically universal processes in the late stages of acquisition, when developmental factors decrease. Major’s model has been tested within the realm of phonology (Major 1994) and even in accordance with Optimality Theory L2 sound systems (Hancin-Bhatt and Bhatt 1997, Broselow, Chen, and Wang 1998), but never on the level of morphosyntax within a purely variationist paradigm.

I argue here for a consideration of a “looser” version of Major’s hypothesis which analogously follows the 19th century adage from evolutionary biology, “ontogeny recapitulates phylogeny.” (Haeckel 1899), where ontogeny refers to patterns of interlanguage development over the life cycle of a variety, and phylogeny to patterns of language change over the scale of successive generations. Here, I test the hypothesis that grammatical and intonational fossilization in successive generations of the speech of contact “interdialect” communities may structurally recapitulate the theoretically-elusive stages of real-time language change in stable dialect communities.

Two caveats are necessary. First, far from asserting a literal or even linear version of Haeckel’s original thesis, I argue here that we must consider the significant ways in which changes in a structural form—whether linguistic or biological— are, as they are

correlated in functional and social space, “drawn on the same axis” of linguistic change. In brief, I argue that “short variation” as it occurs under the rubric of progressing, internally-consistent interlanguage “waves” of development, may meaningfully map out language change (with a coefficient value of X ethnic dialect).

Second, while biologists may neutrally assume the cerebrum is a superior organ than, say the coccyx, it is important to clarify that, in opposition to Adamson’s framing of interlanguage structures as ranging from “simple” to “complex” over time, I argue for the democratic interlanguage whose grammar shifts and intra-compensates to remain internally consistent (and, as conditioned, more target-like), but *not* more or less linguistically or functionally “complex.”

To test this hypothesis, I first take up the sturdy –t/d variable which has been used ubiquitously (and fruitfully) in sociolinguistic studies to elucidate diverse constraint rankings, and hence, underlying processes, in many dialects of English (see Fasold 1972, Guy 1980, Labov 1972, Santa Ana 1991, Wolfram 1969, among many others).

For the speakers in this study, the -t/d variable spells out not only the constraints on the phonological process of deletion, but two morphosyntactic constraints: 1. the effects of verb class and 2. a grammatical process of past tense unmarking. These two distinct sound and structure processes converge to create an additive effect (cf. Wolfram and Hatfield 1984) whereby past tense forms may be variably unmarked in the Hispanic English of the two communities studied, in Texas and North Carolina.

Secondly, I investigate constraints on an intonational variable somewhat less familiar to researchers on variation, nuclear peak accent alignment. Thus, the next section will provide a brief sketch of the variable itself as well as relevant research up to the time of this study.

1.2. Research Justifications for Pitch Accent Alignment Studies

The intonational features of dialects have been seldom investigated by researchers for studies of sociolinguistics variation and instrumental acoustics, though numerous researchers (Tarone 1973; Penfield & Ornstein-Galicia 1985; Wolfram & Thomas 2002; Fought 2003; Fought & Fought 2003; Carter 2005) have noted the salience of intonational contours in Hispanic English varieties. In the future, research on the novel intonation systems of ethnic contact dialects, where data is available on the competing constraints of “parent” languages, is especially valuable in a number of ways.

First, these types of investigations may help distill broader theoretical questions regarding so-called “segmental anchoring,” “secondary association” and the “phonemics” of alignment currently debated in studies of intonational phonology (see Atterer & Ladd 2004 for a discussion). The question, “are the targets of intonational contours aligned in the segmental stream or with each other” (Atterer and Ladd 2004, p. 177) is crucial in assigning autonomy to the phonetic vs. the intonational “tiers” of phonological systems in languages.

Second, the intonation of ethnic contact dialects informs questions of the first and second language acquisition of both segmental and intonational rules:

Just as languages can differ intonationally at the phonological as well as the phonetic level, intonational interference can also occur on both these levels. Thus, phonological interference would involve transfer resulting from intonational differences in the inventory of phonological tunes, their form, and in the meanings assigned to the tunes. Phonetic interference, on the other hand, would involve transfer resulting from a difference in the phonetic realization of an identical phonological tune (Mennen 2004, p. 546).

What can the patterns of peak alignment in Hispanic English tell us about the inherent organization of segmental vs. intonational systems in speech? How do speakers learn the tunes and segments of a second language relative those of their first? How do these contact patterns of segmental and tonal rubrics stabilize into diagnostic, pan-lectal features?

As in the analysis of the previously described grammatical variable, I investigate the degree to which these constraints on pitch accent alignment (in both native Englishes and Spanishes) show patterns across space and time which are projections of a unitary phenomenon— and, that, importantly for researchers interested in divining language change, the ontogenic sequence of interlanguage structures may well provide a roadmap for change over time.

1.3. Framing the issue: Rising tones, displacement, and pragmatic meanings in pitch accent alignment

In the last two decades, researchers on Spanish intonation (especially those using a Sp_TOBI framework) have disagreed on both the conventional and theoretical terms of

the dynamics of rising nuclear pitch accents in various languages. Early studies on Mexican Spanish (Prieto, van Santen & Hirschberg 1995; Prieto, Shih & Nibert, 1996; Prieto, 1998; Nibert 2000) argued for a “generic” H* label, where the high tone is perceptually associated with the stressed syllable (whether or not it is temporally aligned within the syllable or after it). A somewhat larger group have traditionally used the bitonal L+H* label (Sosa, 1995, 1999; Face, 2001c, 2002a, 2002b, 2003; Beckman 2002) citing a lack of “tonal sag” between the two H targets of the tonal contour. This latter convention has been the one that has generally emerged in the literature (Face & Prieto 2007).

Whether termed H* or L+H*, it has been well documented that the F0 peaks of these rising accents are sometimes displaced outside of the temporal bounds of the stressed syllable in Mexican Spanish, within both nuclear and prenuclear accent gestures (Navarro-Tomás, 1944; Fant, 1984; Garrido, Blistery, de la Mota & Ríos 1993; Prieto, van Santen & Hirschberg 1995).

In addition, adjustment of peak alignments have been shown to affect pragmatic force in the intonational systems of many languages, including English (Pierrehumbert & Steele 1989, Cullinan 2008), German (Kohler, 1987, 1990, 1991a, 2006; Niebuhr 2003; Niebuhr & Kohler, 2004), Italian (Grice & Savino, 2003), Greek (Arvanti, Ladd & Mennen 2006) and Spanish (Face & D’Imperio 2005; Willis 2003, Face & Prieto in press). In addition, Grabe et al. (2000) reports on differential pitch accent realization (though here it is in terms of truncation and compression) in four varieties of British

English, with the potential for phonetic variability to spell out distinct intonational structures in a single variety's repertoire.

Combining the above two observations with inconclusive reports (Thomas & Callahan 2007) on the prevalence of rising boundary tones in the Tejano English, the motivation emerges for a hypothesis which can account empirically for the rising glide feature, noted early on in studies of the variety (Penfield & Ornstein-Galicia 1974; Peñalosa 1980) as a diagnostic, perceptually salient feature of Chicano English.

This paper will unite the two observations above to describe the acoustic dynamics which may contribute to perceptual contours of Chicano English in terms of their rising glide gestures. If the alignment of peak accents in general can contribute in consistent ways to pragmatic meaning, with relatively later alignments indicating contexts of surprise or excitement (Bolinger, 1958; Kohler, 2006) in standard varieties of English, then the additional observation that peaks may be aligned later for Spanish than English could potentially contribute to just such a perceptual effect.

In this paper— in the tradition of recent studies by Mennen (2004) on bilingual speakers of Dutch and Modern Greek and Atterer and Ladd (2004) for speakers of two varieties of German (the latter as the only study on *dialectal* variation in terms of peak accent alignment that, to my knowledge, has been produced)— we compare the alignment patterns of the nuclear peak accent rise gesture in Hispanic English (HE) to the analogous gestures in both “substratal” Mexican Spanish and a local contact variety of Southern Anglo English (SAE). The following hypothesis are tested:

Alignment values for the rising HE peak accent gesture will be intermediate to the values of the contact SAE variety and the L1 Spanish variety, e.g. HE peak alignment reflects the “hybrid” nature of the dialect’s sound system.

2. Communities and Speakers

2.1 Pearsall

This study examines data from two communities: Pearsall, Texas, and Durham North Carolina. The two communities’ populations are compared for convenience in Figures 1-2, though we will return to a discussion of Durham’s social dynamics later in this section.

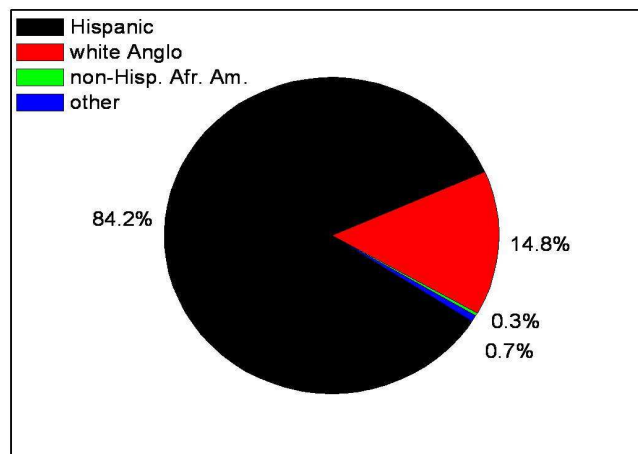


Figure 1: Overall population of Pearsall, TX by ethnicity

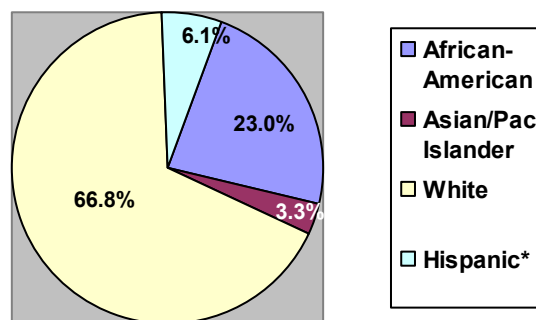


Figure 2: Overall population of Durham, NC by ethnicity

The communities are socially and demographically distinct. Pearsall, located about two hours from the Mexican border (see Figure 3), is currently home to four generations of Spanish-speaking residents (beginning with immigrants who had come from all parts of Mexico).



Figure 3: Location of Pearsall, TX

As they are preserved in apparent time, the varieties of Tejano English and Spanish for the three youngest Pearsall generations are examined in this study: these varieties are termed G1, G2, and G3. The generational “cells,” with numbers and demographic information on speakers is shown in Table 1 below:

Table 1: Demographics of Pearsall, TX speakers/community

	DOB	GEN.	OCCUPATION	LANG(s)	NOTES
ET	1918	1	Migrant Worker, homemaker	Bilingual (prefers Spanish)	Both parents came to Texas from Mexico; father from Monterrey
MP	1920	1	Domestic (ironing, sewing, cleaning)	Bilingual (balanced?)	
JV	1922	1	Dairy Queen clerk	Bilingual (balanced)	Worked in nearby Devine with all Anglos during young adulthood; some unglided /ai/
CV	1926	1	Hospital worker, domestic	Bilingual (balanced?)	
MC	1932	2	Domestic	Bilingual (balanced)	Lived in Dumas, TX for 7 years; lives with sister JV
RC	1937	2	City Manager	Bilingual (balanced)	College education
CP	1937	2	Homemaker/domestic (took in ironing)	Bilingual (balanced)	Laments that grandchildren (in TN with Anglo mother) don't speak Spanish
AHS	1943	2	Homemaker/migrant worker	Bilingual (balanced)	
RR	1946	2	5 th grade public school teacher	Bilingual (English-dominant?)	B.A. from UTSA
AG	1951	2	4 th grade public school teacher	Bilingual (English-dominant?)	M.A. in Education (Reading Specialist); college minor in Spanish
SC	1968	2	Deputy District Clerk of County Court	Bilingual (English dominant)	College education
PR	1989	3	High school student	English (says he can speak/understand limited amount of Spanish)	Says he plans to go to college
RCJr.	1989	3	High school student	English	

Pearsall is now a largely monoethnic (Chicano/Hispanic) community whose history is framed by sharp measures of segregation that delineated the town's modes of living: for most of the last century, its neighborhoods, ranches, farms, and churches existed and functioned as displaced across a racial divide. The train tracks which run through the center of town unambiguously mark off what were, during this period of segregation, the Anglo and Hispanic section of town. Montejano (1987: p. 168; with quotes from Taylor pp. 282-283 and Hufford 37-50) cites historical records of another "Winter Garden" (vegetable farming) county near Pearsall:

Mexicans were expected... to have 'a deferential body posture and respectful voice tone' whenever in the presence of Anglos. All contact between American and Mexican [sic] followed rather explicit rules. Movie houses, drugstores, restaurants, retail stores, banks, schools, and so on— the institutions of 'modernity'— had brought with them definitions of the 'proper place' of Mexicans. Public buildings were seen as 'Anglo territories'; Mexican women were 'only supposed to shop on the Anglo side of town on Saturdays, preferably during the early hours when Anglos were not shopping'; Mexicans were only allowed counter and carry-out service at Anglo cafés; and all Mexicans were expected to be back in Mexican town by sunset. So completely segregated were the two towns that, in effect, 'there was an Anglo world and a Mexicano world' whose main point of contact was the 'dusty fields.'

At the time of this study, Anglo neighborhoods, ranches and farms, as well as the town's set of public buildings, larger shops, restaurants, more expensive homes, and even

new development (the local WalMart, fast food restaurants, motels, and gas stations) still lie on the “Anglo” side of the tracks.

The Hispanic side of town (as demarcated by the train tracks) is now composed of smaller, more modest homes and trailers, churches (most Hispanics in Pearsall are Catholic, while Anglos are Protestant), and schools (see Figure 4 below).



Figure 4: Home in “Spanish Town,” Pearsall

At the time of our fieldwork, a Catholic church recreation hall hosted their weekly *bingo* night, which was extremely popular with segments of the population even as young as thirty. The churches also host *quinceañeras* (mentioned as important by several of the female teenage informants, some of whom were monolingual English speakers), baptisms, weddings, and funerals, all of which functioned as gathering spots and points of

social exchange for Pearsall's (old and young) Hispanic community. Several members of the oldest generation, aged 80-90, mentioned that attend an early morning mass every day, visit the Catholic convalescent home on a weekly basis, and organize shopping trips into San Antonio to patronize the local religious shops for rosaries, prayer cards, and scapulars (sacrament necklaces devoted to a particular Saint).

In order to frame our analyses of how the linguistic variables under study may constitute social realities (e.g. in terms of accommodation and/or divergence from Anglo varieties of English), we asked explicitly about race relations in Pearsall during our sociolinguistic interviews, both currently and historically. One fourth-generation Hispanic male high school student, born in 1987 (17 at the time of this interview), explains the situation this way:

- 1 INT: /clears throat/ what's uh (.) what's it, what's it like at uh (1), the high school at your
 2 (.) at the high school here?
 3 PR: At high school? Um (1) [/inhales audibly/
 4 INT: [about the different social groups=
 5 PR: =uh-huh (.) um (2) /exhales/ well (3) I guess you could say that there's (2) um (1) I
 6 don't know (3) /inhales audibly/ um like I— I guess you could say that the different
 7 social groups (.) are like (2) which would involve the (4) like the popula::r and (1) and
 8 like just like your ordinary (.) clans like (.) popular [and
 9 INT: [yeah
 10 PR: and your (.) gothic (.) type of style (2) like goth (.) like u:h (2) like you have your
 11 people who dress like (.) in black with um (.) painti:ngs and black (.) paintings and all

- 12 that [stuff
- 13 INT: [uh-huh=
- 14 PR: =yeah (2) you have (2) it's really like (.) I dunno it's— it's weird because this school
- 15 like (3.5) there's no separation between any people (1) everybody's like (.) you can talk
- 16 to anybody there's no like hesitations or like (.) “well well he's (.) he looks like that or
- 17 anything I dunno it's just like everybody mingles with each other
- 18 INT: uh-huh
- 19 PR: it's it's it's really go:od (.) I mean because there's no: (.) like (1) {more quietly; pitch
- 20 drops} I don't wanna say like segregation or anything {more loudly, pitch rises} but you
- 21 know how like s— on different schools how they (1) they have like (.) their (.) different
- 22 people who they wanna talk to and like (.) people they don't wanna talk to and [stuff
- 23 INT: [yeah
- 24 PR: /inhales/ yeah (1) but I don't know it's (.) and (.) as far as the staff...

PR has a modern sensitivity to the practice of segregation: his “bracketed” statement in 19-20 (complete with iconic acoustic cues), which brings about a change in footing (Goffman 1974; 1979, 1981) *vis-à-vis* himself and the white college professor he is talking to: it is a perspective-taking gesture that indexes the markedness of racism in the society he knows. He continues:

- 25 INT: is there uh (2) any uh (1) tension between (.) uh Anglos and Hispanics or
- 26 PR: Anglos and (1) Anglos and {rising intonation} no: (.) we actually (.) mingle quite
- 27 [well /inhales/
- 28 INT: [yeah?
- 29 PR: /exhaling/ yeah (.) because (.) I mean (.) I dunno it's weird because like (3) there's:

30 (1) I dunno I guess (1) there's there's (.) not (.) that many like (1) stuck-up people or like
 31 y'know what I mean? (1) and (.) like (.) us (.) like the Hispanics and the (1)
 32 /swallows/ Anglos well we get quite (.) like (.) we (3) we get together really well I
 33 mean we're like all f:riends and stuff and (.) it's really not that h—hard like to (.) to make
 34 friends or (.) like be (.) separated

Here, we should note that while PR's statement describes positive relations between the two groups, it follows from a presupposition that equates the two designations 1. *Anglo* and 2. *stuck-up*. His intra- (textual) and extra- (intonational, pausal, respiratory) linguistic cues neatly reflect the “double consciousness” of being both simultaneously an insider and an outsider in his own community (in terms of Bruce 1999: 238). In our interviews, speakers from the oldest generations, when openly asked questions about segregation, rarely hesitated or exhibited a departure from their default intonational patterns. We will return to a discussion of how this configuration of groups and identities in Pearsall functions as a cohort to linguistic variation in section 5.3.

2.2. *Durham*

Durham, by contrast, is a city in the heavily-developed Research Triangle Park region of the North Carolina Piedmont, which has only recently experienced heavy Hispanic in-migration from many parts of Latin America. In addition, African Americans make up a sizeable portion of Durham's population, especially for those under 18 (Figure 5 below), outnumbering whites or Hispanics:

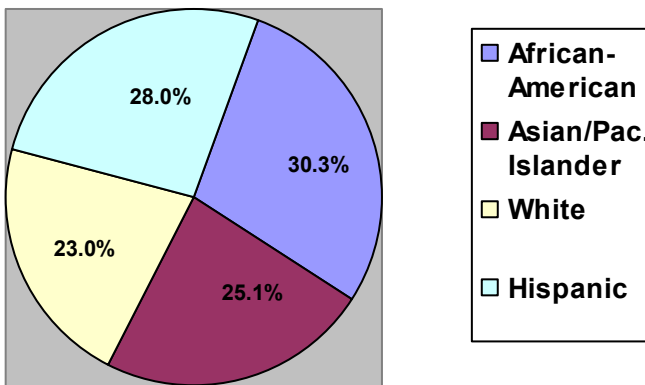


Figure 5: Population under 18 by ethnicity for Durham, NC

Since Durham's Hispanic population is so new— representing only one or two generations— the varieties spoken there are not delineated by generation, but by length of residency (LOR). Those speakers living 2 years in the United States (not necessarily, but usually, only in North Carolina) are grouped together for the purposes of this study in category LOR1. Speakers with an LOR of 3-4 years are grouped together in LOR2, and speakers with an LOR of 5 years up to native speakers (born in the U.S.) are grouped together in LOR3. These LOR groupings were drawn based on this researcher's years of experience as a North Carolina Public School English as a Second Language Teacher in Durham, NC and Creedmoor, NC, as well as diagnostic language proficiency testing instruments used by the NC Department of Public Instruction (Vecchio and Guerrero 1995). Subsequent analysis supports the statistical validity of these LOR groupings for the variables under consideration.

Speakers were drawn from three schools in Durham, one elementary school and two middle schools, and ranged in age from eleven to fourteen. All speakers in LOR1-2

were born in Mexico. The data used in this analysis were taken from sociolinguistic interviews performed by graduate student fieldworkers from the North Carolina Language and Life project, and currently archived in the North Carolina Sociolinguistic Archive and Analysis Project database (Kendall, 2005).

Table 2: Demographic details for Durham speakers and comparison varieties

Speaker	Community	Ethnicity	Sex	Language(s)	LOR (yrs)
Enrique	Durham	Hispanic	M	HE, SPAN	2
Marisa	Durham	Hispanic	F	HE, SPAN	2
Elizabeth	Durham	Hispanic	F	HE, Span	2
Silvia	Durham	Hispanic	F	HE, Span	2
Josh	Durham	Hispanic	M	HE, Span	2
Yolanda	Durham	Hispanic	F	HE, Span	3
Alejo	Durham	Hispanic	M	HE, Span	3
Graciela	Durham	Hispanic	F	HE, Span	4
Leticia	Durham	Hispanic	F	HE, Span	4
Lori	Durham	Hispanic	F	HE, Span	4
Jorge	Durham	Hispanic	M	HE, Span	5
Marcos	Durham	Hispanic	M	HE, Span	8
Rolando	Durham	Hispanic	M	HE, Span	12
Jesus	Durham	Hispanic	M	HE, Span	13
Lou	Durham	Hispanic	M	HE, Span	15
Shakima	Durham	African American/b. 1995	M	AAVE	n/a
Nashuan	Durham	African American/b. 1996	M	AAVE	n/a
BF23	Durham	African American/b. 1982	F	AAVE	n/a
AAF	Durham	African American/b. 1946	F	AAVE	n/a
Pete	Durham	European American/b. 1989	M	StEng	n/a
FD	Raleigh	European American/b. 1962	M	SWVE	n/a
WM2	Raleigh	European American/b. 1942	M	SWVE	n/a
Eduardo	Los Mochis	Mexican/b. 1976	M	Mex Span	n/a
Rosi	Los Mochis	Mexican/b. 1951	F	Mex Span	n/a
Kary	Los Mochis	Mexican/b. 1979	F	Mex Span	n/a

Shaded cells represent comparison varieties, including three speakers from the medium-sized town of Los Mochis, in the northwest part of Mexico. All speech samples were collected within the format of the typical sociolinguistic interview by North Carolina State graduate student fieldworkers who are bilingual in English and Spanish. In most cases, The Spanish and English interviews were conducted on different occasions by different interviewers. Speakers, especially in Durham, were interviewed in dyads whenever possible to increase comfort level. Topics in both the English and Spanish interviews of Durham included the typical everyday interests of American middle school students: school events, movies, recreational activities, and dating. Mexican speakers spoke about the influence of the U.S. and English on Mexican culture as well as their own careers, interests, and aspirations. Local AAVE, Standard English, and Southern White Vernacular English speakers spoke on various topics, including how the Triangle region of North Carolina had changed over the years.

In addition, one Durham speaker, Lou spoke about gang activity he had witnessed and even participated in (e.g. getting “jumped” to be initiated into a gang)— though after more ethnographic observation and conversation with school officials, Lou was relegated to “wannabe” gang status for the purposes of this study. His dialect of Hispanic English was not, impressionistically at least, fundamentally different any of the others.

Speech sample “Pete,” “AAF,” “WM2” and “BF23” were recorded as part of a program of NSF-funded recordings collected to ensure a baseline of high-quality speech samples from representative areas of the state of North Carolina for NCCLLP. Their interviews, consisting of spontaneous answers to basic demographic questions (“Where

were you born?” “Are you married?”) constitute the bulk of the speech sample analyzed, as well as re-tellings of familiar fairy tales. The final third of the sample consists of speakers reading controlled sentences, though these tokens were not analyzed due to variation in speech style/register. These speakers were recorded in a soundproof lab in the Communications Department of NC State University.

3. Methodology and Coding Conventions

3.1. *Unmarked Past Tense*

The analysis was based on a total of 1463 tokens of past tense (bimorphemic) or cluster-final lexical (monomorphemic) tokens in speech: 558 total tokens from Durham and 905 total tokens from Pearsall. The verbal tokens were further coded by verb class (as originally in Wolfram and Hatfield 1984 and Wolfram 1985; subsequently in Adamson 1996 and Bayley 1996) into three sub-categories:

1. Regular (cluster) forms (e.g. *talked*)
2. syllabic (“long”) forms (*wanted*), and
3. Irregular forms (*was, went, had, kept, got, ate*)²

This measure encoded the first variable, verb class, which was hypothesized to (at least partially) account for reduction patterns.

The second variable, Spanish perfective vs. imperfective function, was formulated and applied as it exists in speakers’ L2: to describe events in the past recognized to have internal structure. The following coding practices were observed:

² At this stage of the analysis, all irregular forms were conflated into one category, though in future analyses they may be distinguished by Wolfram’s (1984, 1985) categories: “replacive,” “internal vowel change,” and “suffix vowel” to encourage the emergence of more fine-grained constraints.

1. only homorganic consonant clusters were coded (-t, -d/, and -k (but not r-))
2. cluster-final tokens were taken only in pre-vocalic or pre-pausal environments

The verbal tokens were further coded by verb class (as originally in Wolfram and Hatfield 1984 and Wolfram 1985; subsequently in Adamson 1996 and Bayley 1996) into three sub-categories: 1. Regular (cluster) forms (e.g. *talked*) 2. syllabic (“long”) forms (*wanted*), and 3. Irregular forms (*was, went, had, kept, got, ate*). Tokens that were potentially lexicalized were excluded: *and, just* as well as alternate past tense verb forms (e.g. *come*) that were identified in the native contact vernaculars. Finally, for coding of grammatical constraints, past tense verbs were coded for imperfective vs. perfective function.

3.2. Peak Accent Alignment Analysis Coding Procedures

Each speech sample was analyzed using the acoustic software praat. The following values were measured for each token by hand or by praat function (e.g. for isolating pitch maximums and interpolating pitch at those points). The data was automatically extracted using a praat script written for this analysis³. Times are measured in ms and F0 in Hz for the following data points:

- Start point of stressed syllable CV in terms of C onset
- End point of CV, in terms of onset of the following consonant, or, in the case of a phrase-final syllable, the offset of V (e.g. silence)
- Time of peak accent, in terms of F0 maximum over CV span and (in the case of Spanish, to account for the “displacement” effect) span of syllable that follows CV.

³ Thanks go to Tyler Kendall, who graciously wrote the praat script used in this analysis

- Pitch at start point
- Pitch at end point
- Pitch at peak accent
- Text of syllable
- Boundary tone: LL, HL, LH, HH
- Time (in syllables) to IP end

Figure 6 below shows an example of a token as coded in praat:

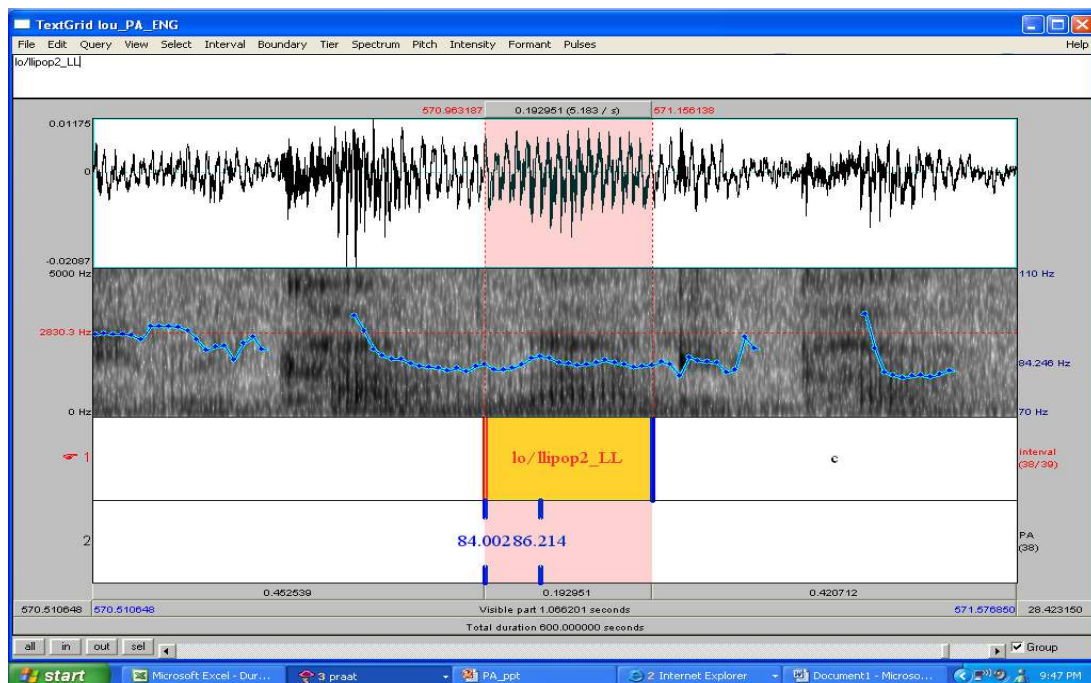


Figure 6. Sample test item for PA Alignment Analysis

Following Prieto et. al. (1995), only sonorant consonants were used as they present minimal disruption of the pitch track and have been shown to exhibit consistent peak timing effects (van Santen & Hirschberg, 1994 in Prieto et. al., 1995).

One problem which arose in coding the data was that boundary tone effects could obscure the precise location of the peak accent being identified: in the case of rising boundary tones LH% and HH%, a single rise could constitute both the accent gesture and the boundary tone signature, obscuring the isolation of individual H targets for each process. Ultimately, only “level” (HL%) or “falling” (LL%) boundary tones were used as they represent a more diagnostic environment for measurement.

Other errors of Praat’s pitch tracking mechanism which complicated the coding process include creaky voicing, low amplitude, and speech overlap (with, for example, the interjection of an interviewer). In these cases, tokens were also excluded.

4. Results: Past Tense Unmarking

Figures 9-10 show the trajectory of the reduction (in the case of monomorphemes) and unmarking process (in the case of verbs) for three generations of Pearsall speakers and 3 LOR cells of Durham speakers. The information is duplicated in Figure 7 and table 3 below:

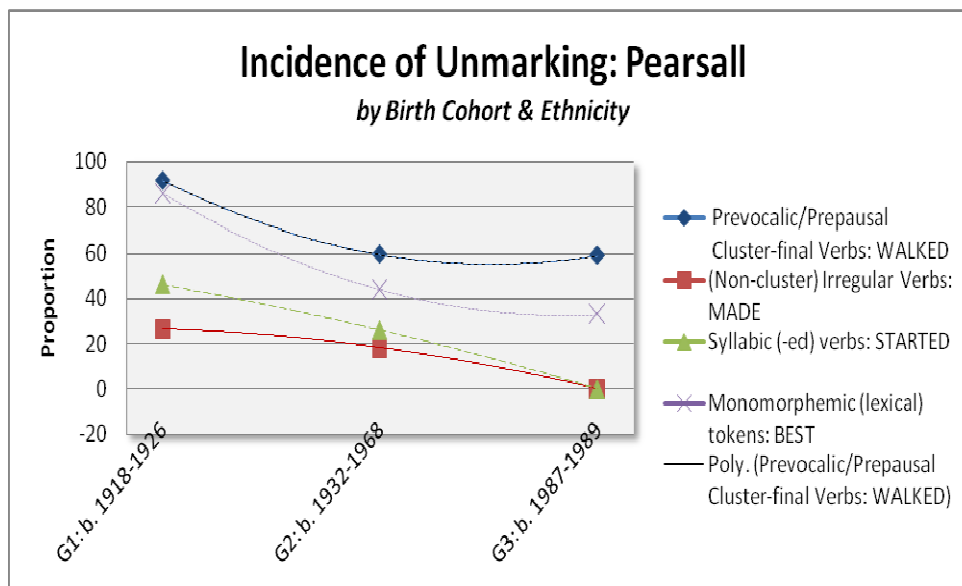


Figure 7: Incidence of unmarking by generation (Pearsall/graphic)

Table 3: Incidence of unmarking by generation (Pearsall/numeric)

	Prevocalic/Prepausal Cluster-final Verbs: WALKED (n=148)	(Non-cluster) Irregular Verbs: MADE (n=110)	Syllabic (-ed) verbs: STARTED (n=384)	Monomorphemic (lexical) tokens: BEST (n=69)
G1: b. 1918-1926	91.7	26.7	46.2	86
G2: b. 1932-1968	59.5	18.2	26.1	44
G3: b. 1987-1989	59.0	0	0	33

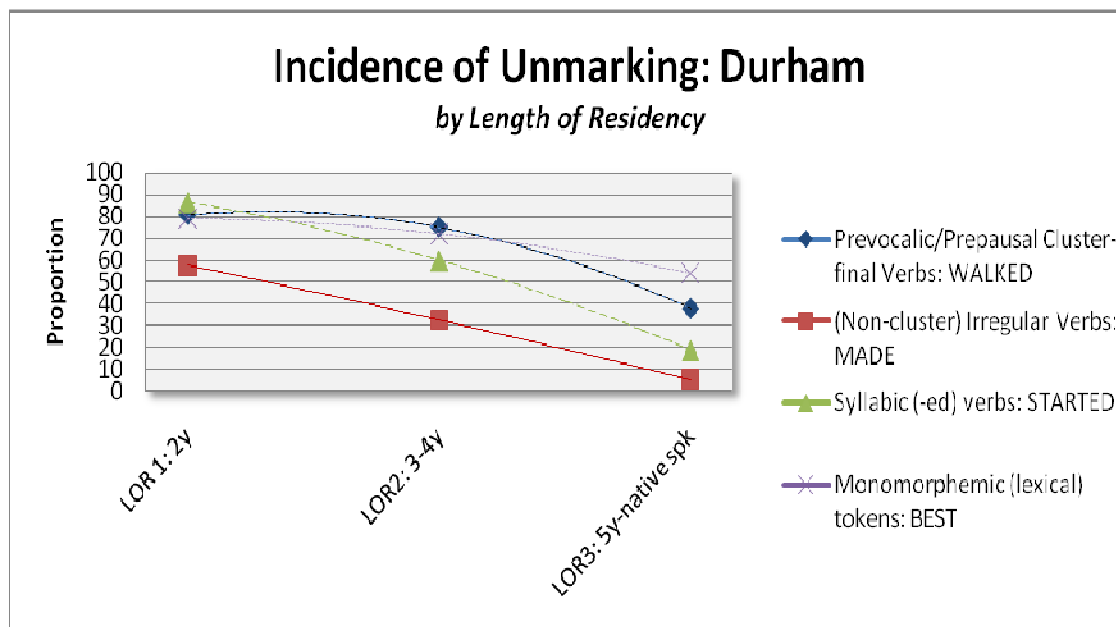


Figure 8: Incidence of unmarking by type and LOR (Durham/graphic)

Table 4: Incidence of unmarking by type and LOR (Durham/numeric)

	Prevoalitic/Prepausal Cluster-final Verbs: WALKED (n=113)	(Non-cluster) Irregular Verbs: MADE (n=110)	Syllabic (-ed) verbs: STARTED (n=384)	Monomorphemic (lexical) tokens: BEST (n=88)
G1: b. 1918-1926	80.6	57.8	86.7	79.0
G2: b. 1932-1968	75.0	32.7	60.0	72
G3: b. 1987-1989	37.8	5.3	18.8	54.0

5. Discussion: Past Tense Unmarking

5.1. G1: Interlanguage structures vs. stable(izing) dialect forms

We should note that while G1 speakers are U.S. born, they simultaneously reported that they started “learning English” when they entered school around age five; it is therefore plausible that the English forms in their interviews are simply fossilized

interlanguage structures reflecting (despite speakers' own attestations) defective L2 proficiency.

Here, at first glance, the fact that similar reduction rates apply to (bimorphemic) verbal tokens and (monomorphemic) lexical tokens could suggest that reduction patterns simply result from Spanish phonotactic constraints and that the process could, further, be the result of a language learning effect, since speakers are not “sensitive” to morphological distinctions (e.g. they are analyzing “flatly” all tokens as monomorphemic). This latter explanation follows from numerous findings (beginning with Wolfram 1969) that most native dialects of English respond to differences in functional load in terms of their levels of cluster reduction— thus a bimorphemic form like *talked* “resists” reduction as compared to *nest*.

We could even extend this line of reasoning (e.g. “pure reduction”) to account for reduction of the unstressed syllable in long past forms like *started* or *loaded*, especially pre-consonantly, a phenomenon which occurs commonly even in native varieties of English, as in rapid speech (cf. Lindlom 1963).

However, what of tokens of *made* as *make*, or *knew* as *know*, where we find both the present tense and past tense forms appearing in the data for a single speaker? Here the phenomenon divorces itself from an account of phonetic reduction to a grammatical one of functional unmarking. With a longer examination of the (asymmetrical) grammars of both English and Spanish, a clearer picture emerges. Figure 9 below shows GoldVarb Results for Pearsall verbal data coded in terms of the Spanish imperfect function as well as verb class:

application value= 0
Input= 0.398

Group	Factor	Weight, n
1	Equivalence to Spanish Imperfect	0.887; n=366
	Equivalence to Spanish Simple Past	0.172; n=480
2	Verbs with past marker in a consonant cluster	0.856; n=148
	Strong verbs (i.e., irregular past with no -d/-t suffix)	0.360; n=110
	Verbs with past marked as -əd (e.g., wanted, planted, added)	0.552; n= 384

Figure 9: GoldVarb results for unmarking (Pearsall: all generations)

First, it seems the unmarking process is strongly correlated with unmarked tense, at a factor weight of .887 ($\chi^2/\text{cell}= 1.03$; Log likelihood= -294.012) for verbs which describe an imperfect function. Pearsall speakers are, in effect, null-marking to encode a meaning distinction present in the form-function mappings of Spanish (Figure 10 below):

Group	Factor	Weight, n
1	Equivalence to Spanish Imperfect	0.837; n=154
	Equivalence to Spanish Simple Past	0.301; n=299
2	Verbs with past marker in a consonant cluster	0.745; n=113
	Strong verbs (i.e., irregular past with no -d/-t suffix)	0.434; n=384
	Verbs with past marked as -əd (e.g., wanted, planted, added)	0.552; n=110

Figure 11: GoldVarb results for unmarking (Pearsall: all generations)

5.2. Typological Unmarking in L1/L2 English comparison varieties

Pearsall Tejano English, however, follows an unmarking trend correlated with verbal aspect that occurs (independent of transfer effects) in surprisingly broad ways: Wolfram et. al. (Wolfram 1985, Wolfram, Christian, and Hatfield 1986a, 1986b) found irregular verbs were unmarked less often than regular verbs for Vietnamese learners of English, which he accounted for with the *principle of saliency* ('the more distant phonetically the past tense irregular form is from the non-past, the more likely it will be marked for tense' 1985:247). Perhaps more pertinent is a (native variety) study of American Indian English (Wolfram 1985), where the unmarking variable correlated with habitual aspect, a distinction similarly found in the variety's "substrate" (ancestral) past.

Bayley (1994), however, finds perfectivity correlated with past tense unmarking for Chinese learners of English with stable factor weights across proficiency levels (p. 175). Poplack and Tagliamonte (1998, 1993, 2001), in accounting for variation in the past tense marking systems of a diasporic African American enclaves, further note

...the factor of verbal aspect is very robust. Statistically significant in all varieties, its contribution is particularly great in Guysborough Enclave and Nova Scotian Vernacular English, though the constraint hierarchy is remarkably consistent across varieties and verb types. Past habitual/durative events... favor the stem form, while past punctual events... disfavor it (143).

The authors quote several examples of the unmarking process as evident in the speech of their interviewees which are strikingly similar to excerpts from the Pearsall data. Compare (24) from Poplack and Tagliamonte (143) with an excerpt of a G1 Pearsall speaker in (25):

(24) a. *Interviewer*: Well uh, didn't you say you used to sing that in the field too?

Informant: Yeah I *sing* that in the fiel' too. Yes sir (ESR/001/62-62)

b. Aunt Hattie and the people used to work in town. We *come* out and *meet* them, *carry* the clothes home for them (GYE/074/155) (Poplack & Tagliamonte 2001: 143)

(25) "...I **used** to make a lot of tortilla I used to make a lot of them I **used to** do a lot of things like that when I **was** at home because my husband he always *like* to bring people to eat and then when we **went** to the other state he **took** kids from here and when they **were** in summer they **were** not working they *don't* have anything to do he **took** them over there and they *work* over there and I **had** to feed 'em all I **had** to make a lot of tortillas frijoles and everything whatever they *eat*" (ET/ptx001)

AAVE (e.g. 1988, 1993, 2001), Hackert (2008) provides a comprehensive review of the variationist literature on zero-marking noted for worldwide English varieties including Guyanese Creole (Bickerton 1975, Rickford 1986a), Liberian English (Singler 1984), Jamaican Creole (Patrick 1991, 1999), contemporary AAVE and Trinidadian English Creole (Winford 1992, Kang 1994), Gullah (Weldon 1996), Barbadian (Blake 1997a),

Tristan da Cunha English (Schereier 2003), and Bahamian Creole (Hackert 2004). The bulk of these studies, as well as many studies on the tense system of contemporary AAVE, variously consider the primacy of aspect (e.g. past habituais) in tense-marking systems.

But in what *direction* does zero-marking follow aspectual dimensions? Hackert (2008) continues:

In Bickerton's description of the 'typical' creole tense-mood-aspect (TMA) system (1981: 58), the interpretation of the unmarked verb is dependent on the situation's aspectual characteristics: whereas unmarked statives express the present, unmarked nonstatives receive a past interpretation. This description has often been taken to imply that creoles possess 'special' TMA systems, different from those of any other language. A look at the typological literature, however, reveals striking similarities with noncreole languages (cf. Velupillai, 2003). Thus, the unmarked verb frequently appears as an instantiation of the PERFECTIVE (PFV) cross-linguistically (Bybee et al., 1994:90-91); perfective verb situations constitute its most important use in BAhCE as well (135).

Both varieties of Hispanic English in this study, however, caution us against making broad-based claims about how the unmarked past variable may function cross-varietyally or typologically, since here, the process is reversed: zero-marking accompanies IMPERFECTIVE function, not PERFECTIVE.

Finally, if not native varieties of English, can we straightforwardly use non-native varieties of English to predict unmarking effects? In discussing Bayley's (1994) data on Chinese learners of English, Preston (1996) notes that Bayley's results

...imply a model in which the factor of perfectivity has a stable pattern of influence throughout the learning process. That is, perfective verbs encourage past tense marking and imperfectives discourage it with nearly the same weight at both proficiency levels. That suggests two things. First the path of acquisition of this feature is tied to markedness... Second, and more interesting, the relatively level influence of past-tense marking according to perfectivity across proficiency levels suggests that no radical restructuring of the grammar as regards this feature has gone on...(27)

Though Bayley's speakers *do* correlate past tense marking with perfectivity (a comparable direction), they have not "progressed" in their activated versions of interlanguage for this feature: the constraints of their grammar have not changed over time. In this case, the direction of the change is the same, but there is no change to be had—the marking variable seems to be simply "idling" over time.

In both the Durham and Pearsall data, however, learners do "progress" in terms of (discarding) the unmarking feature. Can we make typological-type claims within *one* ethnic variety (in two different communities) which share an L1 and L2? In other words, can we meaningfully compare the direction and quality of a (unitary) change— or, in other terms, an *ontogeny of* processes?

With respect to these questions, Figure 12 (below) displays the numeric array of data, statistically processed with GOLDVARB for significance.

		Factor weight; n		
Group	Factor	G1/LOR1	G2/LOR2	G3/LOR3
1	Equivalence to Spanish <u>Imperfect</u>	0.887; n=135 <i>0.796; n=101</i>	0.862; n=205 <i>0.760; n=28</i>	n/a <i>0.953; n=25</i>
	Equivalence to Spanish <u>Simple Past</u>	0.076; n=111 <i>0.183; n=92</i>	0.214; n=288 <i>.404; n=83</i>	n/a <i>0.351; n=122</i>
2	Verbs with past marker in a <u>consonant cluster</u>	0.965; n=48 <i>0.744; n=31</i>	0.808; n=79 <i>0.837*; n=8</i>	n/a [59% raw bimorph. reduction] <i>0.948; n=37</i>
	Strong verbs (i.e., irregular past with <u>no -d/-t suffix</u>)	0.289; n=172 <i>0.435; n=223</i>	0.377; n=303 <i>0.455*; n=98</i>	n/a <i>0.202; n=94</i>
	Verbs with past marked as <u>-əd</u> (e.g., wanted, planted, added)	0.453; n=26 <i>0.591; n=15</i>	0.586; n=111 <i>0.720*; n=5</i>	n/a <i>0.793; n=16</i>
χ^2 /cell = .3630		0.2120 <i>0.0728</i>	1.2706 <i>0.0000 (group1)</i>	n/a

Figure 12: GOLDVARB data for each G1/LOR cell

In Figure 12 above, in terms of the unmarking variable, the set of “phylogenetic” generational values (normal text in the table) seem correlated with “ontogenic” LOR values (italicized in the table): as mentioned previously, both the phonetic (CC reduction) and grammatical (unmarking) variability are significant (χ^2 /cell < 1.5 in all cases) for both communities, Durham and Pearsall, overall. Looking more closely, how do constraints play out both among and within generational and LOR cells over time?

To begin, within G1/LOR1 cells, constraint arrays match up neatly: both factors (represented by the phonetic and grammatical variables) reach significance in the data, and furthermore, display the same constraint rankings within groups 1 and 2. In Pearsall's generation 2, however—though the unmarking variable remains robust in the data, the phonetic variable does *not* reach significance levels, though corresponding rankings in factor weights (* starred in the data above) may indicate that the *direction* of change remains the same. For third generation (largely only receptively bilingual or English monolingual) Pearsall speakers, the grammatical variable has vanished: though cluster-final mono- and bimorphemic tokens are still reduced at reliably high rates, past tense verbs are not (effectively) unmarked any more or less when they describe an imperfect function, and no tokens of the “benchmark” non-cluster irregular forms show up as unmarked in the data.

Thus, during the second generation, as community-wide levels of balanced bilingualism—and the raw materials for variability— begin to disappear, so does the unmarking variable.

5.3 Identity and Incentives

Why, in a broad sense (and how) would a Spanish-substrate structure become instituted in the grammatical repertoire of an English-speaking community—and then disappear?

As Dittmar (1993) notes for the acquisition of modals in learner varieties of German, one basic task of L2 communication is “to look for economy and efficiency in language use and to stabilize the expressibility in the basic communicative functions” (216). He goes on to state that for his speaker “this process of grammaticalization

interferes with the process of interaction between nonnatives and natives (“communicative exolingue” in the terminology of Py & Alber 1986) in a significant way, and is thus governed by principles of a pragmatic mode. (218).

Though Dittmar’s formulations may certainly be accurate for the communicative goals of his Polish migrant speaker Janka, they contrast with the nature of communicative goals of a monoethnic language-learning community—which may freely capitalize upon (e.g. grammaticalize) meaning distinctions mapped onto L1 forms which are close at hand. This type of appropriation of linguistic resources is described by ET (a first-generation language learner at age 5, now fully bilingual):

[362s] INT: y que lenguaje prefiere utilizar?

ET: yo? ¡el español!

INT: mmhm

ET: yo... cuando me hablan por teléfono, yo no digo ‘alo.’ Yo le digo ‘bueno⁴’...[la persona que llame]...dice ‘¿habla usted... inglés? Digo: ‘¡ooo [‘whew’] muy poquito! /laughs’

INT: /laughs/

ET: o a veces digo que no hablo... y tiene que ponerme alguien en linea que habla español

INT: /laughs/ ¡excelente!

⁴ “Bueno” is still the typical telephone greeting in Mexico (among other Latin American countries). It is almost immediately displaced (at least in my experience) by some version of the American English “hello” in monolingual Spanish-speaking immigrant communities in the U.S. upon settling here.

By the third generation, however, for speakers who (at most) have only limited receptive proficiency in Spanish (and thus limited proficiency in its functional resources), the grammatical variable fades away. Speakers born in 1987-1989 still exhibit a robust phonetic variable that reliably (e.g. monolingually) reduces monomorphemes more often than bimorphemes, as in other native vernaculars.

In a strictly functional way, the grammatical variable, however, is a casualty of language shift. It is also, however, a casualty of a shifting social consciousness: from the “we vs. them” mentality of a marked minority community (where L2 language forms are fruitfully used as communicative currency within a marginalized group) to a generation schooled in integrationist social rhetoric and situated more evenly in the social space of a monoethnic community. Here, we can contrast PR and ET’s language attitudes and social beliefs in the very terms of the linguistic forms they rely upon.

6. Results: Peak Accent Alignment

One methodological note should precede our quantitative analysis of peak accent alignment (PA): in order to run univariate ANOVA analysis using the statistical software SPSS 16.0, raw peak alignment offset values (measured in ms) were recoded to (peak offset + 1) in order to produce consistently positive values. This convention is observed at every step in the analysis.

6.1. English vs. Spanish

In Figure 16 below, we see a clear language effect ($p < .001$) on peak accent alignment as all varieties of English and conflated against all varieties of Spanish, with

Spanish showing a tendency to displace peaks to the right of (temporally: after) the stressed syllable:

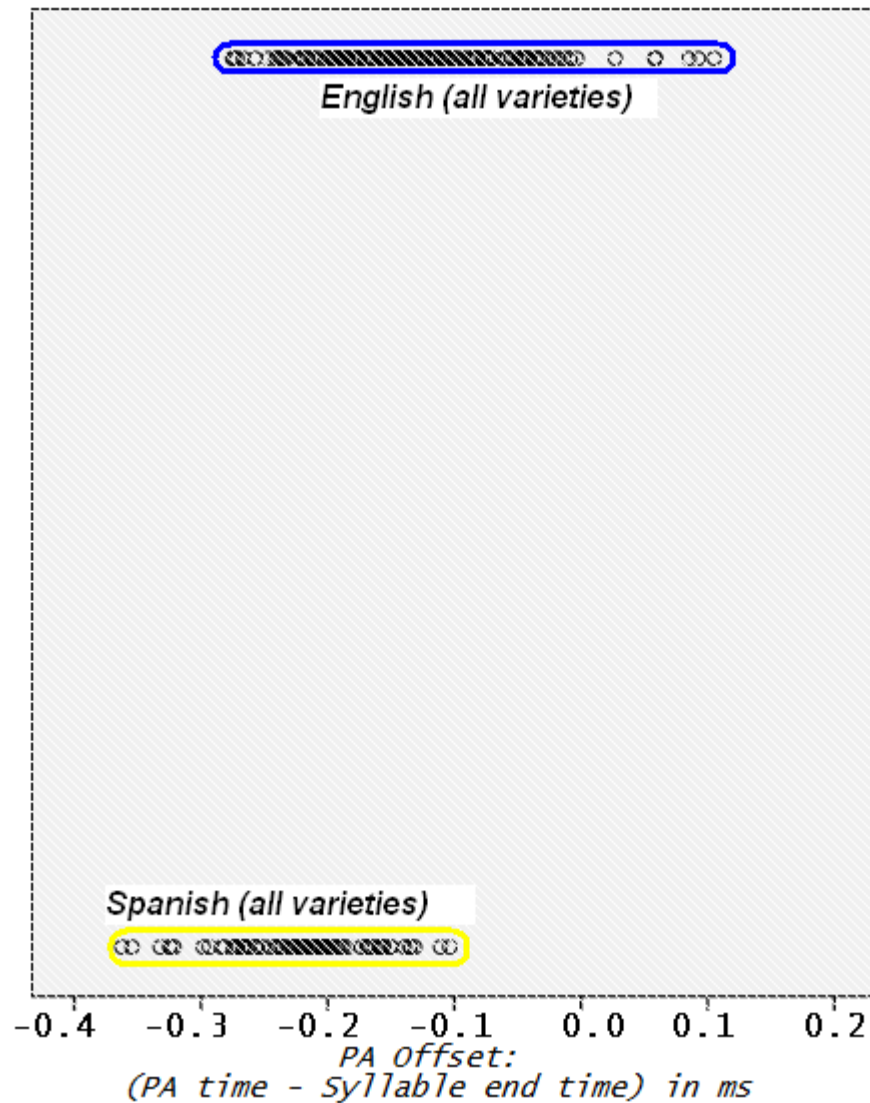


Figure 13: English peak alignment (all varieties) vs. Spanish peak alignment (all varieties)

This data is consistent with previous studies of Peninsular Spanish peak alignment patterns (e.g. Prieto 1995).

6.2. *Spanishes*

An ANOVA first shows, as predicted, a significant effect of community ($p < 0.5$) on PA offset in Durham (Hispanic) Spanish, Pearsall Tejano Spanish, and indigenous varieties of Mexican Spanish (for tokens Durham $n = 34$; Pearsall = 18; Mexican Spanish = 27).

A Tukey post-hoc further clarifies how these community differences settle out:

Table 5: mean differences among Spanishes spoken in Durham, Pearsall, and Mexico

App = PA offset + 1

(I) Com	(J) Com	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Durham	Pearsall	-.01011	.01543	.790	-.0470	.0268
	MEXSpan	-.03827*	.01365	.017	-.0709	-.0056
Pearsall	Durham	.01011	.01543	.790	-.0268	.0470
	MEXSpan	-.02815	.01611	.194	-.0667	.0104
MEXSpan	Durham	.03827*	.01365	.017	.0056	.0709
	Pearsall	.02815	.01611	.194	-.0104	.0667

*. The mean difference is significant at the 0.05 level.

In Table 5, we see that Durham’s variety of (largely immigrant-spoken) Spanish has already begun to differ significantly in terms of its alignment patterns from the indigenous varieties of NW Mexican Spanish used as a comparison. Interestingly Pearsall’s Tejano Spanish, though it has had more time to diverge, remains “anchored” to a national variety of Spanish spoken in close geographical proximity.

6.3 *Age as an internal factor in (Spanish) data?*

Given the uneven distribution of the data itself— fieldwork in Durham was conducted in elementary and middle schools while in Pearsall, two-thirds of the data set

come from speakers aged 88 to 61 years— we should, however, immediately consider age as the underlying factor responsible for the community effect. Are the younger speakers in Durham simply speaking a younger variety of Spanish (e.g. not a Durham, NC variety of Spanish)?

Upon first glance, it that PA does indeed differ significantly according to DOB in the three communities. However, a crosstabulation reveals the DOB “effect” is simply a function of the data distribution itself, which is uneven across communities (notably in Durham, where fieldwork was conducted with speakers 16 years old and under). In order to mitigate the effect of this uneven distribution, DOBs represented in the data were recoded into component categories shown below:

Table 6: DOB recodings for all communities

Age Bracket 1: DOBs	Age Bracket 2: DOBs	Age Bracket 3: DOBs
1918	1951	1984
1937	1968	1987
1941	1976	1992-1998 (inclusive)
1946	1980	
	1962	

In terms of these categories above, a one-way ANOVA shows no significant effect of age (in terms of these groupings) on Spanish PA ($p > 0.5$). We can cite in parallel a comparison of means within all three categories which demonstrates the raw similarities of alignment values across age groups. We note that the standard deviation for PA

“settings” is highest in Durham, the newest and most variable community, perhaps still calibrating its norms: Comparison of Means across Age Categories (Pearsall)

Table 7: Comparison of Means across Age Categories (Pearsall)

App= PA offset + 1

age_c ategor ies	Mean	N	Std. Deviation
1	1.0114	14	.03418
2	1.0289	25	.04853
3	1.0189	40	.06424
Total	1.0208	79	.05497

Finally, the independent measure of linear regression (similarly) shows no significant effect ($p > 0.5$) of DOB on Spanish PA, strengthening the hypothesis that it is community effect, not a generational norm, which is in fact at work in this data

6.4 Sex as an internal factor in (Spanish) data

Is the community primarily due to the interaction of sex as a variable? A further ANOVA disproves this as a possible interaction: the interaction between sex and age categories can similarly be explained as a function of the overall shape of the data set, with females outnumbering males two to one in category 2, and males outnumbering females by the same factor in category 3. A Chi-Square test confirms a significant interaction ($\chi < .01$) of age and sex in the data.

6.5 Englishes

A similar community effect on PA offset was found in English varieties, where PA offset values are found to be significantly different ($p < .0001$) between one community and all the others, as shown in the scatterplot below (Figure 14).

Subsequently, a reference table of mean differences by community and correspondent significance values is displayed in Figure 14, (where mean difference is considered significant at $p < 0.5$).

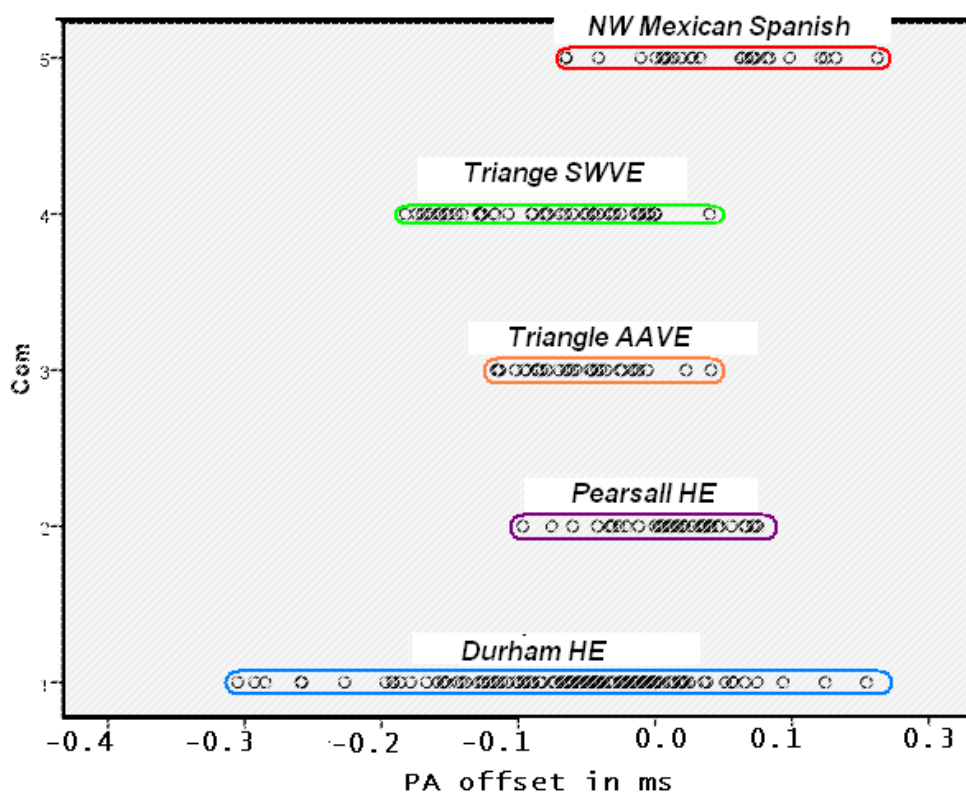


Figure 14: Mean PA Offset Values for Four Communities

Table 8: Significances of mean differences among all communities for English PA

	Durham	Pearsall	Triangle AAVE	Triangle SWVE
Durham	_____	.000	.118	.887
Pearsall	.000	_____	.004	.000
Triangle AAVE	.118	.004	_____	.442
Triangle SWVE	.887	.000	.442	_____

Here, Pearsall is the outlier community, its alignment patterns significantly different from both Durham Hispanic English and all other non-Hispanic varieties of English represented in the data.

A look at the PA means for each community confirms this pattern (Table 9):

Table 9: PA means across communities (English)

App= PA Offset + 1

Com	Mean	N	Std. Deviation
Durham	.9126	77	.08137
Pearsall	1.0108	19	.05022
TriAAVE	.9444	30	.03985
RalSWVE	.9214	48	.06113
Total	.9312	174	.07321

6.6 Sex & Age as internal factors in (English) data

To again examine whether similar internal factors of age and sex are at work in varieties of English—both Hispanic and non-Hispanic Englishes—an ANOVA was run. Again, on first glance, sex and age may appear to be relevant factors in predicting English PA ($p < .05$). Here, a post-hoc Tukey test reveals, however, that Eng PA does *not* differ significantly in terms of age categories set up:

Table 10: Mean Differences by Age Categories

App= PA offset + 1

(I) age_cat egories	(J) age_categories	Mean Differ ence (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.0726	.03955	.161	-.0209	.1662
	3	.0604	.03658	.227	-.0261	.1469
2	1	-.0726	.03955	.161	-.1662	.0209
	3	-.0122	.01719	.757	-.0529	.0284
3	1	-.0604	.03658	.227	-.1469	.0261
	2	.0122	.01719	.757	-.0284	.0529

Consistent with the Spanish results in section 1, a crosstabulation reveals the significant result is a reflex of the original uneven groupings within the data set, the same reflex noted in the Spanish data.

6.7 Code-switches

What about code-switches in and out of each variety—(Hispanic/Tejano) English to (Hispanic/Tejano Spanish)? An ANOVA finds no significant correlation ($p > 0.5$) between code-switching function and peak accent alignment, suggesting a modality of “pure switching” between languages that produces no hybrid/intermediate values. This effect holds true regardless of proficiency (for Durham speakers) in terms of length of residency.

7. Conclusions

Preston notes:

SLA is in some ways dramatically positioned, I believe, to contribute to variationist understandings of language. Its respondents are on a fast-track of language change, allowing real- rather apparent-time studies...(31)

We have in this paper, through a discussion of interlanguage variables exhibiting real-time and apparent-time evolution, provided encouraging evidence for Preston’s hypothesis, e.g. the *direction* and *quality* of change can be accurately accelerated and modeled in a learner community in terms of our grammatical variable. It is here, happily, that variation theory may well be better equipped to explain universal linguistic processes than traditional UG accounts or idealizations by— as Preston puts it— “sorting out influences rather than trying to ignore them.” (31).

When surveying the patterns produced by the intonational variable, however, a distinct picture emerges. Geographically-separated ethnic varieties and interlanguages seem to be variably “anchored” to the sound patterns in their (Spanish) substrate:

interestingly, the longest-standing L2-heritage community (Pearsall), which by many accounts speaks a “distinct” variety of Tejano Spanish, still aligns with indigenous (national) varieties of Spanish just over the border. Hispanic English varieties present a similarly complex picture, with geography (*not* ethnicity, whether Hispanic, African-American or European-American) slicing apart significant differences in PA patternings.

Is accommodation in peak accent alignment simply accelerated— and grammatical variation more “stubborn”—when L2 “based” varieties are displaced from a native L2 environment? Do future generations of new Hispanic English communities continue in their patterns of accommodation and divergence over subsequent generations? Here, future research on cohort sound and structural variables are needed to fill in the gaps of “ontogenic” and “phylogenic” processes under investigation. The preliminary theoretical stance taken here, in any case, is one which leaves room for idiosyncrasy and multi-layered sensitivities, which reflect the diversities of speakers and communities themselves, and *all* the linguistic resources within their grasp. Accordingly, this data, in the end, indicates that HE does not take sound or structural variables part and parcel from Spanish *or* English— a type of transfer variation to be studied in its own right.

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