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# Variation in Miami Cuban Spanish Interrogative Intonation

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Abstract: The interrogative intonation of Cubans and Cuban Americans living in Miami is investigated. Two different intonation patterns are used in this variety of Spanish to convey absolute interrogative meaning: one with a falling final contour, as has been observed in Cuban Spanish, and one with a rising final contour, as is used in American English and most varieties of Spanish. A variable rule analysis exploring the use of these two intonation patterns was carried out. It was discovered that immigrant group is a significant factor in the variation and that there is an intonational change occurring in subsequent generations. The social relationships of individual speakers are also a significant factor influencing the absolute interrogative intonation pattern used.

Keywords: dialect contact, intonation, language contact, language variation, Miami Cuban Spanish, Spanish in the United States

#### 1. Introduction

f the Spanish-speaking groups in the United States, the Cubans living in Miami are relatively recent arrivals. Most Cubans living in the United States arrived between 1959 and 1962, when approximately 248,070 Cubans came to Florida fleeing the communist revolution (López Morales 2003). Subsequent waves of Cuban exiles have come to the United States throughout the years, including immigrants from the *Vuelos de Libertad* or "freedom flights" and the 1980 Mariel boatlift. Since the arrival of the *marielitos*, Cubans continue to arrive in the United States via third countries as well as in small groups of *balseros*, 'raft people', who risk their lives crossing the Strait of Florida in anything that will float.

The vast majority of Cubans coming to the United States have settled in Miami, in part due to the similar climate and the geographical proximity to their homeland and also due to the Cuban atmosphere of the city and the extensive network created by the first group of exiles. The Cuban community in Miami has traditionally opened its arms to new arrivals and helped to house, feed, and employ them. This system has created a community that has allowed the Cuban culture and language to flourish in Miami. According to the 2006 US Census Bureau estimates, 61% of the total population in Miami-Dade County is Hispanic or Latino. Of these approximately 1.5 million Hispanics, 62% (767,000) are Cuban, making up the largest group defined by ethnicity.

Miami Cuban Spanish is an understudied variety of Spanish spoken in the United States, particularly in regard to its phonology. Linguists studying this population have focused on issues related to language maintenance and shift. Although no consensus has been reached, most studies seem to indicate that the Spanish language is presently alive and well and that Miami is, indeed, a bilingual city. As such, Miami presents an ideal setting in which to study the effects of language contact.

Some researchers have pointed out simplifications or changes that have come as a result of Spanish/English contact in Miami. This transfer of English elements into Miami Cuban Spanish has been observed in the lexicon (e.g., Otheguy and García 1988; Varela 1974), the

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morphosyntax (e.g., López Morales 2003; Lynch 2000; Porcel 2002), and the phonology (e.g., Lynch 2009; Varela 1992). Other than Varela's (1974) and Lynch's (2009) descriptions of Miami Cuban Spanish pronunciation, there has been little subsequent work on the phonological system of this variety, and only recently has its intonation been examined.

One of the reasons intonation is so important in Spanish is declarative and absolute (i.e., ves/no) interrogative utterances are usually lexically and syntactically identical, leaving intonation as the only cue to differentiate between the two possible meanings. In most varieties of Spanish, declaratives and absolute interrogatives are distinguished by the final F<sub>0</sub> contour of the utterance: falling in declarative utterances and rising for absolute interrogatives. Cuban Spanish, however, has been shown to use only a falling  $\overline{F_0}$  pattern in absolute interrogatives (García Riverón 1998; Sosa 1999). Because Cuban Spanish absolute interrogatives and declaratives both have final falling pitch contours, possible confusion can result when a Cuban Spanish speaker is speaking to a speaker of a language that uses a final rise in pitch to mark a question (e.g., American English and many varieties of Spanish), Alvord (2006) showed that Cuban Spanish does not use the shape of the final intonational contour to differentiate between declarative and interrogative meaning. Instead, it uses pitch scaling, that is, higher F<sub>0</sub> peaks and valleys in interrogative utterances. The final fall for absolute interrogatives, however, is not unique to Cuban Spanish; it is also unmarked in the Spanish of Asturias, Galicia, the Canary Islands, and other, but not all, Caribbean countries. Nevertheless, the final rise is still the most common absolute interrogative intonation pattern both in Spain and in Latin America (Hualde 2005; Sosa 1999). American English also uses the rising final F<sub>o</sub> contour to mark yes/no questions (see Figure 1). The fact that American English and most varieties of Spanish use a final rise to mark absolute interrogatives whereas Cuban Spanish uses a falling final contour presents a unique phenomenon that can be analyzed in light of the language and dialect contact situation in Miami.

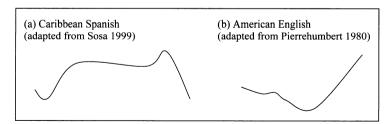


Figure 1. Schematic of Cuban Spanish (a) and American English (b) Absolute Interrogative Intonation Patterns

Miami Cuban Spanish is different from Cuban Spanish in that the Miami Cuban variety has been shown to produce two different intonation patterns for absolute interrogatives. The first and most common pattern observed in the data (Figure 2) has a rising final  $F_0$  contour and is similar to the absolute interrogative intonation pattern observed in American English and in most other varieties of Spanish. I refer to this intonation pattern as the "rising pattern." The second pattern has a falling final contour (Figure 3). This is similar to the pattern reported for Cuban Spanish (e.g., García Riverón 1998; Sosa 1999), which I call either the "falling" or the "Cuban-style" pattern. For the purposes of this paper, the "final contour" is the  $F_0$  movement that immediately follows the final pitch accent and continues to the end of the utterance. These two intonation patterns are also represented in schematic form in Figure 4, which includes the pitch accent labels from Alvord's (2006) autosegmental metrical analysis.

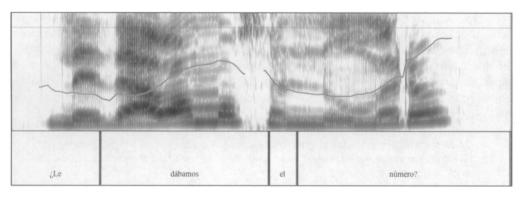


Figure 2. Pitch Track Illustrating the Rising Final Contour of the Absolute Interrogative Utterance: ¿Le dábamos el número?, 'Did we give him/her the number?'

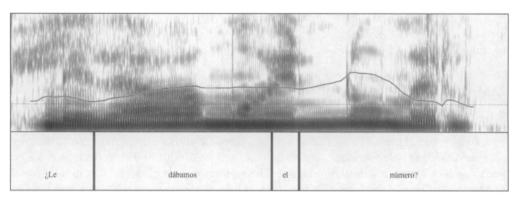
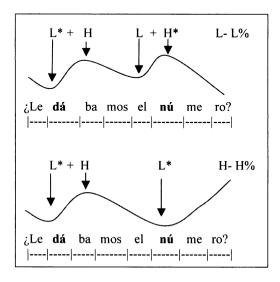


Figure 3. Pitch Track Illustrating the Cuban-Style, or Falling, Interrogative Pitch Pattern of the Interrogative Utterance: ¿Le dábamos el número?, 'Did we give him/her the number?'



Pitch accents, phrase tone, and boundary tones are labeled using autosegmental metrical notation.

Figure 4. Schematic of the Cuban-Style Falling Interrogative (above) and the Rising Pattern Interrogative (below).

This study seeks to discover the motivation behind the use of these two patterns. It investigates the change in intonation patterns in successive generations of Miami Cubans and explores how interrogative intonation patterns have been affected by the intense language contact situation in Miami: Cuban Spanish in contact with both English and with many other varieties of Spanish. Finally, it is my goal to elucidate the contribution of social and linguistic variables involved in the production of these two intonation patterns. These goals are articulated in the following research questions:

- Is the intonation system changing through subsequent generations of Miami Cubans?
- What are the social and linguistic factors motivating the use of the observed absolute interrogative intonation patterns?

In order to achieve these goals and answer the research questions, an experimental phonology study was designed and carried out. Section 2 describes the research methodology, the participants, and the social variables considered (section 2.1); the methodology for data collection (section 2.2); and the procedures used in data analysis (section 2.3). Section 3 provides the data analysis and variable rule analysis results. The discussion and conclusions based on the findings are found in section 4.

## 2. Methodology

## 2.1 Speakers and Social Variables

Twenty-five female Miami Cubans chosen from four immigrant groups participated in the study. Only female speakers were included in order to control for the effects that sex has been found to have on Spanish intonation. Chela Flores (1994) observed that in the Spanish of Maracaibo, Venezuela, men used more innovative declarative intonation patterns than did women. Although it is likely that sex is a factor in intonational variation for this community, this variable is controlled in the current study and left for future research.

The main sociolinguistic variable under examination is immigrant group or generation. Any study of Spanish in contact with English in the United States must consider immigrant groups as defined by Silva-Corvalán (1996). The current study uses her three immigrant groups as a point of departure. The groups are defined as follows: group 1 – those people born in Cuba who arrived in the United States after the age of eleven, group 2 – those who were born in the United States or who arrived in the United States before the age of six, and group 3 – those born in the United States to at least one parent in group 2. All but two speakers fit neatly into these categories. The remaining two speakers are part of the group that Pérez Firmat (1994) called the "one-and-a-halfers." These Miami Cubans came to the United States from Cuba between the ages of six and eleven, being raised partially in one culture and then immigrating into a new culture before adulthood.

Although no empirical study has shown that Spanish intonation varies according to social class, it is likely that social class is an influential social variable, and many researchers claim that it does affect intonation (e.g., Cruttenden 1997; Quilis 1993). Since this variable has not been treated at all in previous intonational studies on Spanish, social class was treated similarly to the variable of sex for the purposes of the current study: its influence was controlled as much as possible. Participants were recruited from my informal social relationships in Miami, and it was the goal to recruit participants from similar socioeconomic backgrounds. In order to control for possible differences in socioeconomic status between the participants, each speaker was asked to answer questions, adapted from the Hollingshead four-factor assessment, that would provide a measure of their socioeconomic status. The measure used in the current study is an adaptation of the Hollingshead, called the simple measure of social status (Barratt 2006), which

is basically the Hollingshead four-factor measure "updated to reflect contemporary concepts of occupational prestige" (2).

Other sociolinguistic variables considered include age at arrival in the United States, years living in the United States, and social relationships of the individual speakers. Age at arrival is considered to be important because it indicates the age at which each participant was likely to begin acquiring English. It is possible that a younger age of arrival would contribute to more English-like intonation. The factor "years in the United States" takes into account the amount of time each participant has been acquiring English. Again, it is possible that a longer amount of time in contact with English is a factor in the production of English-like intonation patterns. Social relationships are taken into account because it is hypothesized that the people with whom the participants interact have an effect on the speech of each individual. Five categories (factor groups) with four factors within each group are included in the examination of social relationships. These factor groups include (1) spouse/partner, (2) friends, (3) neighbors, (4) co-workers, and (5) club or organization co-members. Each factor group contained the same four factors: (a) none (reported), (b) Cuban(s), (c) other Spanish speaker(s), and (d) English speaker(s). Questions adapted from Klee and Caravedo (2005, 2006) were designed to elicit information from each participant concerning the place of origin and language spoken by the people for each of the five categories. For example, the following questions were asked: "Are you married/living with a partner? If so, where is your spouse/partner from? Does he/she speak Spanish?" Information on each speaker, including their immigrant group, age at arrival, years in the United States, and their age at the time of data collection along with their use of the Cubanstyle (falling) intonation pattern is provided in Table 1, and Table 2 gives the information on each speaker's social relationships.

#### 2.2 Data Collection

A laboratory phonology approach was adopted in which a series of twenty-four sentences were designed, with an accompanying context, in order to elicit neutral absolute interrogative utterances (see appendix) from the Miami Cuban participants. Care was taken to design the contexts and sentences so that only a neutral absolute interrogative meaning was solicited. A neutral absolute interrogative is a yes/no question with no special pragmatic meaning implied, that is, the questioner has no preconceived answer in mind when posing the question. It has been shown that this type of absolute interrogative is categorically produced with a falling intonation pattern in Cuban Spanish (García Riverón 1998). For the facilitation of pitch tracking, the target sentences were also created avoiding voiceless consonants, stops, and fricatives.

Although not common in studies of language contact and sociolinguistics, read speech is used extensively in intonation studies. There are several advantages to using laboratory speech rather than a more naturalistic style of speech. The first reason is practical in nature; the number of naturally occurring examples of any one type of utterance, especially interrogatives, is very low. Also, both segmental and syntactic factors have been shown to exert an influence on F<sub>0</sub>. Voiceless consonants, for example, inherently have no pitch, whereas different vowels naturally have different fundamental frequencies; all things being equal, open vowels have a lower F<sub>0</sub> than do closed vowels (Cruttenden 1986). This elicitation, that is, a laboratory approach, was necessary due to the fact that finding a suitable number of neutral absolute interrogative utterances for analysis in a corpus of naturally occurring speech would be impossible. Another reason to limit the current study to experimentally controlled speech is the complexity of intonation itself. Intonation can be used to express a wide range of linguistic and extralinguistic factors; the interaction of these factors is very complex and relatively poorly understood. Intonation is greatly affected by both emotion and attitude. By controlling the context in which each utterance is produced, the emotion and attitude of the speaker while producing each utterance can be expected to be relatively equal. In spontaneous speech, however, the emotion expressed by the

Table 1. Cuban-Style (Falling) Intonation by Immigrant Group, Age at Arrival, Time in United States, and Age

Subject ID	Group	Age at arrival	Years in U.S.	Age	Falling Pattern	Total N
4	1	22	1	23	22 (100%)	22
2	1	33	2	35	24 (100%)	24
1	1	19	3	22	21 (91%)	23
24	1	16	4	20	24 (100%)	24
3	1	36	6	42	0 (0%)	23
23	1	38	16	54	0 (0%)	18
21	1	12	18	30	0 (0%)	24
17	1	18	35	53	0 <u>(</u> 0%)	24
7	1.5	8	12	20	0 (0%)	20
9	1.5	10	9	19	0 (0%)	23
6	2	1	20	21	12 (55%)	22
10	2	0	20	20	0 (0%)	24
11	2	0	19	19	0 (0%)	26
16	2	0	20	20	0 (0%)	24
19	2	0	28	28	0 (0%)	23
20	2	0	30	30	0 (0%)	24
22	2	5	17	22	0 (0%)	24
26	2	0	40	40	2 (14%)	14
27	2	1	44	45	0 (0%)	24
8	3	0	20	20	12 (86%)	14
12	3	0	20	20	5 (31%)	16
14	3	0	18	18	17 (71%)	24
15	3	0	34	34	0 (0%)	19
18	3	0	21	21	0 (0%)	22
25	3	0	19	19	22 (96%)	23

speaker in conjunction with any given utterance will be quite different from any other utterance. Due to the number of possible confounding influences on the intonation (e.g., emotion, attitude, pragmatic meaning, and phonetic factors) and the unknown nature of their possible effects, it is a necessity to exert a level of control over what is being investigated. Although it can be argued that a sociolinguistic analysis of read speech will present results that are not generalizable to the entire community, the challenges of systematically analyzing intonation require the use of such data. Conclusions based on laboratory speech provide an important starting point but also need to be tested in subsequent research to confirm their validity.

Table 2.

Cuban-Style (Falling) Intonation by Social Relationships:

Friends, Co-workers, Spouse/Partner, and Club/Organization Co-members

Subject ID	Group	Friends	Co- workers	Spouse/ Partner	Organization	Falling Pattern	Total N
4	1	Cuban	Cuban	none	none	22 (100%)	22
2	1	Cuban	Cuban	none	none	24 (100%)	24
1	1	Cuban	Cuban	none	Other Span.	21 (91%)	23
24	1	Cuban	none	none	English	24 (100%)	24
3	1	Cuban	Cuban	none	none	0 (0%)	23
23	1	Cuban	Other Span.	Cuban	none	0 (0%)	18
21	1 .	Cuban	none	Other Span.	Other Span.	0 (0%)	24
17	1	English	English	English	English	0 (0%)	24
7	1.5	Cuban	none	none	Cuban	0 (0%)	20
9	1.5	Cuban	none	none	none	0 (0%)	23
6	2	Cuban	Cuban	none	none	12 (55%)	22
10	2	Other Span.	Cuban	none	none	0 (0%)	24
11	2	Cuban	English	none	none	0 (0%)	26
16	2	Cuban	Other Span.	none	none	0 (0%)	24
19	2	English	Cuban	none	none	0 (0%)	23
20	2	Cuban	English	none	none	0 (0%)	24
22	2	Cuban	Other Span.	none	English	0 (0%)	24
26	2	Other Span.	Other Span.	Cuban	English	2 (14%)	14
27	2	Other Span.	Other Span.	English	English	0 (0%)	24
8	3	Cuban	Other Span.	none	none	12 (86%)	14
12	3	English	none	none	none	5 (31%)	16
14	3	English	English	none	Cuban	17 (71%)	24
15	3	Cuban	Other Span.	none	none	0 (0%)	19
18	3	Cuban	English	none	English	0 (0%)	22
25	3	English	English	none	English	22 (96%)	23

The sentences, with their respective contexts, were randomized with a set of distractors, and participants were asked to read both the contexts and the target sentences out loud as they would normally say them. The utterances were recorded with a Marantz PMD670 digital recorder with a sampling frequency of 44.1 kHz using an AKG C420 head-mounted micro microphone in a quiet room in the home of the participant or in a library. I analyzed the  $F_0$  contour, using Praat (Boersma 2001; Boersma and Weenink 2006), to determine whether there is a rise or a fall from the final pitch accent through the end of the utterance.

Due to various factors, it was necessary to exclude a certain number of utterances from the analysis. Because the current study analyzes interrogative utterances, only those utterances that are perceived to be questions could be included in the analysis. A speaker of Miami Cuban Spanish was consulted on the sentence analyzed, and ten utterances were excluded because they were perceived to be statements and not questions. Another forty-two sentences were excluded because of pauses or false starts that interfered with the pitch track extraction. The total number of possible sentences to be analyzed was 600 (4 sets × 6 sentences/set × 25 speakers) with 52 exclusions, leaving a total of 548 sentences analyzed.

## 3. Data and Analysis

Of the 548 absolute interrogative utterances analyzed, 71% (387) were produced with the rising pattern and 29% (161) with the falling (Cuban-style) pattern. The majority of speakers used only one intonation pattern in their absolute interrogatives. Fifteen speakers used only the rising pattern, three produced only the Cuban style, and seven used both patterns. Because immigrant group is the major focus of the current investigation, each immigrant group is examined in detail in sections 3.1, 3.2, and 3.3. The factor groups used in the variable rule analysis are introduced in section 3.4, and the logistic regression is presented in section 3.5.

#### 3.1 First Immigrant Group

The first immigrant group is made up of eight individuals exhibiting a range of bilingual ability. Speakers 1, 2, 3, 4, and 6 expressed a strong preference for Spanish and felt inadequate in their English abilities. Others, speaker 17, for example, are very proficient bilinguals. The bilingual ability of these participants seems to be directly related to the amount of time spent in the United States. The first generation produced an identical number of interrogatives with the Cuban-style pattern (50%, 91/182) as with the rising pattern (50%, 91/182). There is a clear dividing line in this group as to who uses each pattern according to their time in the United States. The most recent arrivals, that is, those members of the first generation who have been in the United States for four years or less, use the Cuban-style (falling) pattern almost exclusively, whereas those who have been in the United States for longer use only the rising pattern. This observation suggests that with more contact with English the rising pattern emerges in the linguistic repertoire of these speakers who were raised primarily in Cuba. An examination of this group's social relationships sheds light on this, pointing not only to contact with English but also to contact with other varieties of Spanish. The most recent arrivals all use the Cuban-style (falling) pattern: speakers 2, 4, and 24 use the falling pattern exclusively, whereas speaker 1 uses it 91% (21/23) of the time. All of these speakers claimed to associate primarily with other Cubans (see Table 2). None of them claimed to have a spouse or partner, but their friends are mostly Cubans and speakers 1, 2, and 4 have mostly Cuban co-workers. Speaker 24's friends are Cuban, but she attends a church where most of the congregants speak other varieties of Spanish. There is an interesting contrast between these speakers who primarily interact with other Cubans and the others from the first generation. Speakers 3, 17, 21, and 23 have all lived in the United States for at least six years, and they all use the innovative (for

Cuban Spanish) rising pattern. Examining the social relationships of these speakers is revealing. Although speaker 3's social relationships are very similar to the recent arrivals, that is, she associates mostly with other Cubans, the other three interact with people of diverse linguistic backgrounds. Speakers 21 and 23, who use only the rising pattern, both interact with speakers of other varieties of Spanish. Speaker 21 is married to a Colombian and attends church with Spanish speakers from all over the Americas. Speaker 23's co-workers are mainly non-Cuban Spanish speakers. The social relationships of these two bilingual speakers (21 and 23) suggest that English contact is not the only motivating factor in their use of the rising intonation pattern. It appears that contact with other varieties of Spanish has also influenced their Spanish in that they have completely adopted the rising pattern. Speaker 17 claims to have social relationships with mostly English speakers: her friends, co-workers, husband, and the members of the club that she belongs to are all American English speakers, implying that English language contact is a major influence in her identity and language. Based on the percentages listed in Table 1, age at arrival and current age do not seem to play an important role in the intonation pattern used by the first immigrant group.

#### 3.2 Second Immigrant Group and Generation 1.5

The second generation overwhelmingly produces the rising style, using the Cuban-style pattern in only 7% (14/204) of their interrogatives and using the rising pattern in 93% (190/204) of the questions produced. Generation 1.5 (speakers 7 and 9) highly favors the use of the rising pattern, producing it categorically. Because these speakers arrived as small children, were born in the United States (second generation), or arrived as adolescents (group 1.5), there is not a great amount of variation in the time spent in the United States. This factor, therefore, cannot be considered a predictor of intonational pattern used for these groups. All of the participants in these groups are highly bilingual. They all mention speaking in "Spanglish" with their friends and family, and they report being able to use both languages with great ability. The social relationships of these speakers appear to reveal important information regarding the language contact for each speaker of these two groups.

The two speakers in generation 1.5 affirm that they associate with only other Cubans, according to the information in Table 2. They claim that most of their friends are Cuban, and speaker 7 goes to a church with a predominately Cuban congregation. Neither one works and neither has a spouse/partner but they both attend college, where they interact with students and professors of varied linguistic backgrounds, including Cubans, other Latin Americans, and speakers of American English. Their social relationship information points to English language contact, that is, bilingualism, as a principal factor in their language use.

The participants in the second immigrant group interact with all three linguistic groups, that is, Cubans, non-Cuban Spanish speakers, and English speakers. The speaker who produced the most Cuban-style questions out of the entire second generation (55%, 12/22) associates mainly with other Cubans (friends and co-workers). The other participant that produced some falling-style interrogatives is speaker 26. She produced two Cuban-style interrogatives (out of fourteen), but her social situation is very different from any of the others in this group. She is married to a Cuban, and most of her friends are non-Cuban Spanish speakers. She speaks both Spanish and English at work, interacting mostly with speakers of other varieties of Spanish, but she belongs to a professional organization where English is the only language spoken (see discussion on this speaker in section 3.5). The rest of the participants in this immigrant group produced only the rising pattern interrogative, and they also revealed that they had close associations with English speakers and speakers of other varieties of Spanish. The most extreme example in this group is speaker 27, who associates with non-Cuban Spanish speakers (friends and co-workers) or English speakers (spouse and club co-members). Many members of the sec-

ond generation interact regularly with speakers of other varieties of Spanish (friends: speakers 10, 26, and 27; co-workers: speakers 16, 22, 26, and 27). Other speakers claim to have strong social ties with English speakers as well (friends: speaker 19; co-workers: speakers 11 and 20; spouse: speaker 27; club/organization co-members: speakers 22, 26, and 27).

All of this information demonstrates a rich language contact environment for the second generation. The almost exclusive use of the rising pattern in this generation strongly suggests that these bilingual speakers have experienced a linguistic change due to language contact. It also appears that the change is not due exclusively to English/Spanish contact. The contact between Cuban Spanish and other varieties of Spanish also seems to motivate the incorporation of the rising F<sub>0</sub> pattern in absolute interrogative utterances.

## 3.3 Third Immigrant Group

The third immigrant group, made up of six individuals, is similar to the second generation in that all six speakers have bilingual ability but a stronger preference for English. They report being proficient in both languages, and they all use Spanish (along with English) at work. Surprisingly, the third generation produced only a few more interrogatives with the rising pattern (53%, 62/118) than with the Cuban-style (falling) pattern (47%, 56/118), and their production of the falling pattern approaches that of the first generation. Three of the six speakers use the falling-style intonation pattern for most of their interrogatives (speakers 8, 14, and 25). Speaker 25 produced the highest percentage of Cuban-style interrogatives (96%, 22/23) despite claiming to have mostly contact with the English language (friends, co-workers, and club/organization co-members). Speaker 14 (71% Cuban style, 17/24) associates mainly with English speakers as well (friends and co-workers) but does belong to a Cuban student organization. Speaker 8, who produced 86% (12/14) of her interrogatives with the falling pattern, has mostly Cuban friends but her co-workers are mostly speakers of non-Cuban varieties of Spanish. The other three members of the third generation produced mostly the rising pattern and have social relationships with English speakers as well as with speakers of other varieties of Spanish. The language contact situation for this group is very similar to that of the second generation, but it produces a much higher percentage of the Cuban-style interrogative than does the second generation. It is not clear from the data presented in Tables 1 and 2 why this group behaves so differently from the second generation. This finding is explored further in section 4.

#### 3.4 Factor Groups

The sociolinguistic factors described in section 2.1 and three linguistic factors explained in this section were analyzed using a logistic regression package commonly used in variationist studies: Goldvarb 2001 (Robinson, Lawrence, and Tagliamonte 2001). Logistic regression using Goldvarb is carried out to determine which factors are significant in their contribution to the variation. It provides a weight that reveals the degree to which an individual factor affects the application of a binary dependent variable. Logistic regression facilitates the analysis of sociolinguistic variables because it is able to deal with the distributional imbalances usually seen in sociolinguistic data. A factor weight of 0.500 is considered a neutral result and neither favors nor disfavors the application of the default value of the dependent variable. A value above 0.500 favors the application of the variable, and a value below 0.500 disfavors its application. A value of 1.0 indicates that the rule is categorical, and a value of 0.0 means that the rule never applies. The dependent variable explored in the present analysis is the shape of the final contour of the absolute interrogative intonation boundary tone: rising versus falling (with rising as the application value).

The independent variables under investigation are both linguistic and social factors that have been hypothesized to affect the interrogative intonation patterns produced. Each independent

variable is referred to as a factor group and is made up of individual factors. This section lists each factor group that was included in the initial coding.

The linguistic factors included in the first step-up/step-down binomial analysis are (1) the number of unstressed syllables between the two stressed syllables of the target sentence, (2) the number of final unstressed syllables (i.e., the number of unstressed syllables following the last stressed syllable), and (3) whether or not a prepositional phrase is present in the utterance. Previous research on Spanish intonation has shown that both the syllabic makeup of an utterance and syntactic constituency greatly affect the intonational patterns produced (e.g., Face 2002). Although it was not known if these factors really do influence the production of the rising or falling final contours for interrogative utterances, they were included because they have been shown to influence the Spanish intonation of other types of utterances. The linguistic factor groups, including the code used in the variable rule analysis, a short description of each factor, and an example, are found in Table 3.

Table 3. Linguistic Factor Groups Included in Variable Rule Analysis

Goldvarb Code	Description/Example
# Intervening Unstressed Syllables	
0	¿Le <b>da nú</b> meros?
1	¿Le <b>da</b> el <b>nú</b> mero?
2	¿Le <b>da</b> ba el <b>nú</b> mero?
3	¿Le <b>dá</b> bamos el <b>nú</b> mero?
4	¿Se lo <b>da</b> ba para el <b>nú</b> mero?
5	¿Se lo <b>dá</b> bamos para el <b>nú</b> mero?
# Unstressed Syllables at End of Sentence	,
0	¿Sa <b>lió mal</b> ?
1	¿Termi <b>nó Na</b> na?
2	¿Le <b>da nú</b> meros?
3	¿Es <b>tá dá</b> ndomela?
Prepositional Phrase	
n	No prepositional phrase
d	'de'
С	'con'
р	ʻpara'

The extralinguistic independent variables, or factor groups, included in the variable rule analysis include (1) age at arrival in the United States, (2) number of years living in the United States, (3) immigrant group (generation), and (4–8) the five factors based on the social relationships of the speakers as described in section 2.1. The extralinguistic factor groups are listed in Table 4 along with the code entered into the variable rule analysis and a short description of each factor.

Goldvarb Code Description Goldvarb Code Description Age at Arrival Spouse 1 12+ 1 none (reported) 2 7-11 2 Cuban Other Spanish-3 1-6 3 speaker 4 born in U.S. 4 English-speaker Years in U.S. **Friends** 1 0-5 1 none (reported) 2 6-10 2 Cuban Other Spanish-3 11+ 3 speaker 4 born in U.S. 4 English-speaker **Immigrant Group Neighbors** 1 1 group one none (reported) 2 h aroup 1.5 Cuban Other Spanish-2 group two 3 speaker 3 aroup three 4 English-speaker Club/Organization Membership Co-workers none (reported) 1 none (reported) 2 Cubans 2 Cubans Other Spanish-Other Spanish-3 3 speaker speaker

Table 4. Extralinguistic Factor Groups Included in Variable Rule Analysis

## 3.5 Variable Rule Analysis

4

The initial Goldvarb run, a step-up/step-down binomial analysis, confirmed that the linguistic variables are not significant. The other factor groups rejected as not significant include "spouse," "neighbors," and "club/organization co-members." The factor groups selected as significant were "age at arrival," "years in the United States," "immigrant group," "friends," and "co-workers" (see Table 5). Although these factor groups were selected as significant in the step-up/step-down analysis, there were a number of factors that contained knockouts that had to be removed. For example, the speakers in generation 1.5 produced only the rising pattern; therefore, this group was removed from the data before the analysis could be completed.

4

English-speaker

English-speaker

After removing all of the knockout factors from the five factor groups that were originally selected as significant, they were analyzed in a one-step binomial Goldvarb run. Initially, however, a statistically significant fit was not achieved. A detailed examination of the frequencies and crosstabulations for the remaining factor groups revealed that there were two reasons for the poor fit.

First, an interaction between the factor groups "co-workers" and "immigrant group" was discovered. In order to deal with this interaction, it was determined that the factor "no co-

Table 5.

Frequencies of Interrogative Intonation Pattern Usage for Factor Groups:
"Age At Arrival," "Years Living in the United States," "Immigrant Group,"
"Friends," and "Co-workers"

Factor Group	Factor	Number of Speakers	Rising Pattern	Falling Pattern	Total
Age at Arrival	after 11	8	67 (42%)	91 (58%)	158
in U.S.	7-11	2	91 (100%)	0 (0%)	91
	1-6	3	34 (74%)	12 (26%)	46
	Born in U.S.	12	195 (77%)	58 (23%)	253
Years Living	0-5	4	2 (2%)	91 (98%)	93
in U.S.	6-10	2	66 (100%)	0 (0%)	66
	11+	7	124 (91%)	12 (9%)	136
	Born in U.S.	12	195 (77%)	58 (23%)	253
Immigrant	1	8	92 (50%)	91 (50%)	183
Group (generation)	1.5	2	43 (100%)	0 (0%)	43
(generation)	2	9	190 (93%)	14 (7%)	204
	3	6	62 (53%)	56 (47%)	118
Friends	Cuban	17	261 (69%)	115 (31%)	376
	Other Spanish- speakers	3	60 (97%)	2 (3%)	62
	English- speakers	5	66 (60%)	44 (40%)	110
	None	0	0 (0%)	0 (0%)	0
Co-workers	Cubans	7	82 (51%)	79 (49%)	161
	Other Spanish- speakers	8	147 (91%)	14 (9%)	161
	English- speakers	6	104 (73%)	39 (27%)	143
	None (reported)	4	54 (65%)	29 (35%)	83

workers" was the cause of the interaction. It was decided that this factor would be excluded from the resulting analysis because of this interaction and because the factor "no co-workers" does not provide any information about the language contact situation of the speakers. Of much greater importance to the analysis is whether the speakers have an active interaction with Cuban, English-speaking or non-Cuban Spanish-speaking co-workers.

The second problem with the original one-step binomial analysis was due to the error rate from the data of one participant, speaker 26. Speaker 26 belongs to the second immigrant group and was born in the United States. She was born in California and moved to Miami at the age of three. She declared that most of her friends are Spanish speakers but not Cuban. She works in the medical field and belongs to a professional organization where English is spoken and her co-workers are English speakers. All of the other participants that fit into those same categories (i.e., second generation, born in the United States, other Spanish-speaking friends, and English-speaking co-workers) produced only the rising pattern interrogative. It would be expected, therefore, that someone with these characteristics would produce only the rising pattern interrogative. Speaker 26, however, produced twelve of fourteen analyzable interrogatives with the rising pattern. The two interrogatives produced with the Cuban-style falling pattern are more than would be expected of a second-generation speaker whose friends are other Spanish speakers and whose co-workers are English speakers. In the Goldvarb analysis, the expected number of applications of the dependent variable (rising pattern) for this group was 84.797 and the actual was 83, causing an error of 15.943 and a  $\chi^2$  per cell of 2.3579 (n.s.). The lower number of applications of the rising pattern for speaker 26 is, therefore, the cause of the error rate. Although it seems that speaker 26's social characteristics should correspond to a categorical use of the rising pattern, she is also married to a Cuban. It may be that her professional life and generational status would lead her to use the more common (i.e., rising) interrogative intonation pattern, but her Cuban identity is not entirely lost. It very well may be that speaker 26 produces more Cuban-style falling pattern interrogatives than expected because she is married to a Cuban and her family life keeps her connected to her Cuban identity. Because speaker 26's data does not fit with those of her social peers, none of whom were married to a Cuban, and her data's presence produced error rates that would not allow a statistically significant fit for the model. her data were removed from the corpus for the subsequent variable rule analysis.

After removing speaker 26's data from the corpus, a new model was generated. The new model resulted in a statistically significant fit with the two factor groups "immigrant group" (with generations 1, 2, and 3) and "co-workers" (including Cuban, other Spanish-speaking, and English-speaking co-workers).

## 3.6. Results

Table 6 shows the final Goldvarb results for the two significant factor groups. The factor "first generation" received a factor weight of 0.464, which disfavors the production of the rising pattern. It would be expected that the first generation, who were all born in Cuba and immigrated to the United States after the age of eleven, would favor the falling Cuban-style intonation pattern. The second generation's factor weight is 0.914, strongly favoring the rising pattern. The results for the third generation are quite surprising. The factor weight is 0.015, which disfavors the production of the rising pattern. One would expect the third generation to behave more similarly to the second generation than to the first generation and favor the rising pattern. However the third generation speakers produced a much higher percentage of falling pattern interrogatives than did the second generation.

When considering the factor group "co-workers" it can be seen that for those Miami Cuban Spanish speakers who primarily associate with Cuban co-workers, the factor weight is 0.034, highly disfavoring the final rising pattern. The factor "other Spanish-speaking" co-workers received a weight of 0.906, favoring the rising pattern. The group "English speaker" co-workers received a factor weight of 0.806, also strongly favoring the rising pattern.

Table 6.

Multivariate Analysis of the Distribution of Rising and Falling Intonation
Patterns for the Factor Groups "Immigrant Group" and "Co-workers"

Factor	N	%	Pattern	Factor Weight	Interpretation		
	Immigrant Group						
2 <sup>nd</sup> generation	178	93%	Rising	0.914	Favors rising pattern		
	12	6%	Falling				
1 <sup>st</sup> generation	92	50%	Rising	0.464	Disfavors rising pattern		
	91	50%	Falling				
3 <sup>rd</sup> generation	62	53%	Rising	0.015	Disfavors rising pattern		
	56	47%	Falling				
Range				90			
Co-workers							
Other Spanish-	135	91%	Rising	0.906	Favors rising pattern		
speakers	12	8%	Falling				
English-speakers	104	72%	Rising	0.806	Favors rising pattern		
	39	27%	Falling				
Cuban	82	50%	Rising	0.034	Disfavors rising pattern		
	79	49%	Falling				
Range				88			
Log Likelihood: -155.690				Input: 0.925			
$\chi^2$ per cell = 0.1443				Total $\chi^2 = 1.1544$			
Total N: 548				Significance: p < 0.001			

#### 4. Discussion and Conclusions

Although no linguistic factors were found to be significant, some extralinguistic factors were found to greatly influence the interrogative intonation of these Miami Cuban participants. The results of the Goldvarb analysis of the extralinguistic factors are especially telling when examined in conjunction with the raw frequencies and the knockout factors (see Table 5).

The raw percentages provide some important clues as to who uses which pattern. For example, those who arrived in the United States between the ages of seven and eleven (n = 2) and those who have lived in the United States between six and ten years (n = 2) categorically use the rising pattern. Those living in the United States for even more time produced 91% of their absolute interrogatives with the rising pattern. On the other hand, very recent immigrants, that is, those who have lived in the United States from birth to five years (n = 4), used the Cubanstyle falling pattern for 97% of their absolute interrogatives.

The social relationships of these Miami Cubans also provide important information as to the role of language/dialect contact on the use of either the Cuban or the rising intonation pattern. Those participants who work primarily with people who come from other Spanish-speaking countries (n = 8) use the rising pattern in 91% (147/161) of the cases, whereas those whose co-

workers are English speakers (n = 6) use the rising pattern in 73% (104/143) of the interrogatives elicited. Another social factor that seems to be important is "friends." Those who claim that most of their friends are from other Spanish-speaking countries (i.e., not Cuba, n = 3) use the rising pattern in 97% (60/62) of the cases, and those who have English-speaking friends (n = 5) use the rising pattern 60% (66/110) of the time. Conversely, those who have mostly Cuban friends (n = 17) produced the Cuban-style (falling) pattern more often than they did the rising pattern (69%, 261/376). Along with the immigrant group, the social relationships of the individual and who they are speaking Spanish with is a very important indicator of which pattern is used. The Goldvarb results corroborate this observation for the factors generation and co-workers, showing that the following factors favor the rising pattern interrogative intonation (factor weights in parentheses):

- Belonging to the second immigrant group (0.914)
- Having primarily non-Cuban Spanish-speaking co-workers (0.906)
- Having primarily English-speaking co-workers (0.806)

The Goldvarb analysis also shows that the following factors favor the Cuban-style falling pattern:

- Belonging to the first immigrant group (0.464)
- Belonging to the third immigrant group (0.015)
- Having primarily Cuban co-workers (0.034)

In response to the first part of the research question stated in section 1, it is evident that there is a change in intonation patterns in subsequent generations of Miami Cuban Spanish speakers. The first generation favors the falling Cuban-style absolute interrogative pattern, and the second generation favors the rising pattern. The third generation, however, is shown to favor the falling pattern. This finding suggests that the differences observed are not representative of a change in progress but seem to represent an introduction of a pattern into the local norm that is already present in Spanish and that is readily available to Miami Cuban Spanish speakers. If there were a change in progress, one would expect the third generation to favor the use of the innovation.

The fact that the third generation disfavors the rising pattern is an unexpected result. A possible explanation for favoring the falling Cuban-style pattern by the third generation may be an issue of identity. Attitudes toward the relative prestige of a linguistic variety are important factors in dialect leveling or accommodation by one linguistic group in contact with another (Giles 1973). For example, Hernández (2009) shows that the linguistic attitudes of Salvadorans living in Houston toward their own Spanish as compared to Mexican Spanish influence their pronunciation. Because they view Salvadoran Spanish as being stigmatized, they unconsciously strengthen word and syllable final consonants so that their pronunciation is similar to Mexican Spanish. Hoffman (2004) found that Salvadorans in Toronto, on the other hand, do not view Salvadoran Spanish negatively and their pronunciation is consequently not modified as was done by the group in Houston. Alfaraz (2002) found that attitudes among Cubans in Miami greatly favor Cuban Spanish over all other varieties of Spanish with the exception of Peninsular Spanish (i.e., Madrileño Spanish), which is considered a near equal. One of the ways the bilinguals in Miami affirm their Cuban identity and separate themselves from the other Spanish-speaking groups in Miami could be through the use of a very Cuban intonation pattern. The prestige of Cuban Spanish in Miami in relation to other Spanish varieties among Cubans in Miami could explain why the third generation favors the Cuban variant. This also suggests that English/ Spanish bilingualism has more of an influence on the intonational variation than does Spanish dialect contact because English enjoys the most social and economic prestige in Miami (Portes and Schauffler 1996).

Another potential explanation comes anecdotally from one of the study participants. She mentioned that she was raised primarily by her grandmother, a member of the first generation, while her mother and father worked multiple jobs. Others in Miami have mentioned that this is a very common occurrence. It is culturally acceptable and not uncommon for multiple generations of Hispanic immigrants in the United States to live together in the same household. It is possible that family relationships and a close proximity between the first and third generations have influenced the transmission of the Cuban Spanish intonation patterns to the third generation. Future research on Miami Cuban Spanish should include attitudinal surveys and questionnaire items regarding familial relationships and caregiver speech.

The second part of the research question seeks to discover the motivations for any changes in intonation patterns. No linguistic factor was found to be significant. The variables "age at arrival" and "time in United States" were not included in the Goldvarb analysis because they had knockout factors. Although these factors cannot be included in the logistic regression analysis, they are important in explaining the variation and are nonetheless linguistically meaningful. Those speakers who arrived in the United States as adults retain their Cuban-like intonation more than those who came at a younger age or who were born in the United States. It is also seen that those who have spent more time in the United States tend to use the innovative rising intonation more than those who are recent immigrants. Additionally, one of the main factors motivating the presence of the rising pattern versus the presence of the falling Cuban-style pattern is the social relationships of the individual speaker, particularly who they associate with at work. The Miami Cubans who have mostly Cuban co-workers favor the use of the falling pattern, whereas those who work with English speakers and Spanish speakers from countries other than Cuba strongly favor the rising pattern.

It is difficult to claim that the introduction of the rising pattern is due only to contact with English in Miami because the rising pattern is also common in other varieties of Spanish. It is impossible, however, to discount the influence of English on the Spanish of these bilingual speakers, especially in light of the relative prestige that Cuban Spanish enjoys over other varieties of Spanish in Miami. It is likely, however, that language contact with both English and other, non-Cuban varieties of Spanish is motivating the presence of the rising pattern. As stated above, the contact situation is not causing convergence to the rising pattern, but a change has occurred nonetheless. Although the second generation has moved toward favoring the more common pattern, the third generation uses both patterns extensively.

It appears that there is a combination of contact-induced change/innovation and dialect leveling occurring in Miami Cuban Spanish that has led to the introduction of the rising pattern into Miami Cuban Spanish. In a dialect-leveling situation, contact with other varieties of Spanish will cause a less common or less "standard" variant to become disfavored and the more "standard" variant to become favored. For example, Torres Cacoullos and Ferreira (2000) found that in New Mexican Spanish, the labiodental [v] becomes disfavored when there is intense contact with Mexican Spanish, which is much more common and considered to be a more standard variety of Spanish and which favors the bilabial approximant [β]. In another example of dialect leveling, Aaron and Hernández (2007) report that Salvadoran Spanish in contact with Mexican Spanish in Houston exhibits a decrease in /s/ reduction. Unlike the Miami Cubans, however, the participants in Aaron and Hernández's study exhibited attitudes that were "somewhat negative" (341) toward Salvadoran Spanish, which might have led them to accommodate their pronunciation to reflect more that of Mexican Spanish. In the Miami Cuban context, the Cuban falling interrogative intonation variant is common to Cuban varieties of Spanish, but the overall majority of Spanish dialects use a rising final contour, which could lead to a dialect-leveling situation, moving from the Cuban falling pattern to the general rising pattern given that a rising contour is so much more common in Spanish. Although the current data do not show a complete leveling toward the rising intonation pattern because the third generation favors the Cuban-style falling pattern, the results could indicate the beginning of a

similar leveling process. The introduction of the rising intonation pattern could also be due to accommodation (Giles 1973). If an interlocutor's linguistic repertoire, in Spanish or English, only includes final rising intonation to signal an interrogative meaning, the innovative rise (in Cuban Spanish) can be used in order to avoid the possible misunderstandings.

Additionally, the intense English/Spanish language contact situation could very well have led to the introduction of the rising pattern into Miami Cuban Spanish. As Thomason and Kaufman (1988) note, any linguistic trait can be transferred into another linguistic system if the contact and bilingualism is of sufficient intensity. At this point English and Spanish have been in intense contact in Miami for almost fifty years, and it is apparent that Miami Cuban Spanish has become a local norm that has adopted an intonational characteristic that is used extensively in American English.

The current study has contributed to our knowledge of Miami Cuban Spanish by showing that an innovative intonation pattern (i.e., rising) has been introduced to this contact variety of Spanish. It has also shown that immigrant generation and the language spoken by co-workers are important factors influencing which intonation pattern is used to express neutral absolute interrogatives. This study has also discussed the roles that Spanish/English bilingualism as well as dialect contact in Miami have played in the intonation of this group. Future research should further examine and differentiate the influence of these two phenomena in Miami Cuban Spanish. The role of caregiver speech in the intonation of this variety of Spanish should also be explored in subsequent studies. The current study also adds to our knowledge by providing new data on intonation in a contact situation, presenting a starting point for future studies of Miami Cuban Spanish as well as studies of the intonational systems of other varieties of Spanish spoken in the United States.

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## **APPENDIX**

## Target sentences and contexts used to elicit absolute interrogative meanings

Context	Target Sentence
Tú y un amigo están hablando de Jorge y quieres saber cómo le fue en un examen. Preguntas:	¿Salió mal?
Estás hablando con tu amiga y quieres saber cómo salió su examen médico. Le preguntas:	¿Salió normal?
Estás hablando con tu amiga y quieres saber cómo salió la elección. Le preguntas:	¿Salió lo normal?
Estás hablando con tu amiga de las noticias del zoológico que no escuchaste. Preguntas:	¿Salió el animal?
Estás hablando con tu mamá de tu primita quien siempre lleva su osito consigo. Preguntas:	¿Salió con el animal?
Juana iba a comprar un perro para su hijo y no sabes si ha salido todavía. Preguntas a tu amiga:	¿Salió para el animal?
Sabes que Nana estaba trabajando en un proyecto importante pero no sabes si ha terminado o no. Preguntas a tu mamá:	¿Terminó Nana?
Sabes que la nana estaba trabajando en un proyecto importante pero no sabes si ha terminado todavía. Preguntas a tu mamá:	¿Terminó la nana?
Estás hablando con tu mamá de tu hermanito que estaba comiendo y le preguntas:	¿Terminó la banana?
Estás hablando con tu mamá de tu hermanito que estaba comiendo y le preguntas:	¿Terminó con la banana?
Tú amigo trabaja en el supermercado y tenía que hacer los letreros. Quieres saber cómo le va en el trabajo y preguntas:	¿Terminó con lo de la banana?
Estás hablando con tu amigo de José quien vende lotería. Le preguntas:	¿Le da números?
Estás hablando con tu hermano de su clase de matemáticas. Le preguntas:	¿Le da el número?
Estás hablando con tu hermano de su profesor de matemáticas. Le preguntas:	¿Le daba el número?
Juan viene a tu casa pero nunca había estado – no sabes si sabe el número de casa. Tu preguntas a tu amigo:	¿Le dábamos el número?
Estás hablando con tu amiga y quieres saber si Jorge le había dado el dinero para el número. Le preguntas:	¿Se lo daba para el número?
Estás hablando con tu amiga y quieres saber si tu y Jorge le habían dado el dinero para el número. Le preguntas:	¿Se lo dábamos para el número?
Compras una entrada a la película y el empleado del teatro trabaja muy lento. Preguntas a un amigo:	¿Está dándomela?
Necesitas una carta de Ana y sabes que está en la oficina de correos. Te preguntas:	¿Estaba mandándomela?
No recuerdas lo que pasó ayer y tu amiga te dice que estaban en la oficina de correos. Le preguntas:	¿Estábamos mandándomela?

## Alvord / Miami Cuban Spanish Interrogative Intonation

## Appendix (continued)

Context	Target Sentence		
No recuerdas lo que pasó ayer y tu amiga te dice que estaban en la oficina de correos. Le preguntas:	¿Estábamos re-mandándomela?		
Estás hablando con tu primo sobre las cartas que han llegado a tu casa. Le preguntas:	¿Estábamos auto-mandándomela?		