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The Graduate School
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LINGUISTIC AND SOCIAL VARIABLES IN YUCATAN SPANISH

A Thesis in
Spanish
by
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Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2006
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ABSTRACT

The dialect of Spanish spoken in Yucatan, Mexico is of interest to sociolinguists and linguistics in general for numerous reasons. First, Yucatan Spanish has been in contact with an indigenous language, Yucatec Mayan, for 500 years. Second, Yucatan has been historically isolated from the linguistic trends of the rest of Mexico. At present, this isolation is rapidly diminishing with the influx of immigrants from central Mexico; this environment has fostered a strong sense of local identity within the Yucatan. Importantly, Yucatan Spanish is currently at a crossroads, as an important demographic shift is accompanied by equally rapid linguistic changes.

Previous studies of the dialect have identified several phonetic variables as representative of the dialect. These include: final labialized nasals [m]; lack of the Spanish stop-fricative alternation in favor of stops [b d g]; the aspiration of voiceless stops (data from [kʰ] is examined here); and the maintenance of hiatus across word boundaries via the insertion of glottal stops [ʔ]. Data was collected in the Yucatan with the goal of examining the correlation of these linguistic variables and social factors.

Using sociolinguistic interview techniques, the researcher interviewed 40 speakers of Yucatan Spanish balanced for gender, age, and social class. Knowledge of the Mayan language was also examined.

Data analysis demonstrated two competing trends in Yucatan Spanish. All variables except one are decreasing in frequency as the dialect adopts pan-Hispanic norms. The remaining variable, [m], shows increased use among middle-aged and younger speakers, as the regional variant [m] is adopted and extended as a marker of
local identity in the face of increased immigration, especially for women who are obtaining more education and entering the workforce. Both gender and age are consistently important factors in the use of Yucatan variants. Likewise, all of the typical Yucatan variants correlated with knowledge of Mayan, lending weight to the argument that these variants are due to prolonged contact and linguistic convergence. Class did not show a consistent effect across variables. Further data and conclusions are discussed.
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ACKNOWLEDGEMENTS

This dissertation is the culmination of many months of work, and its completion would never have been possible without the input, sacrifice, and hard work of my family, friends, and mentors. I will never be able to thank everyone involved, but I would like to acknowledge a few people without whom I could never have succeeded.

First, to my dissertation committee: John Lipski, Jacqueline Toribio, Chip Gerfen, and Barbara Bullock. Without your constant support, mentorship, feedback and friendship I would never have completed this project. With all of your help, this process has been as stress-free as a dissertation can be. As scholars, teachers and mentors you have all set the bar very high, and I hope I can live up to your examples. To John, a special thanks for chairing my committee, and for inspiring me to hop on a plane and explore my questions about Yucatan Spanish.

Numerous individuals in the Yucatan have contributed to this project. First, I am grateful to all of the participants in this study. You welcomed me into your homes, answered my questions, and made me feel as yucateco as possible for a boy from Ohio. To everyone at the CIS, especially Genny Alonso Martín. Dios bo’otik. To David Burton, my friend and mentor from Ohio University: you first introduced me to the Yucatan in 1994, and your invaluable assistance during subsequent visits has made this project possible. Tibi gratias ago.

I would also like to acknowledge several sources of funding that made it possible for me to complete this project (and therefore my degree) in four years. The Sparks Fellowship and the Humanities Initiative Grant from the College of Liberal Arts at Penn
State gave me two semesters of leave time to write, and a travel grant from Liberal Arts allowed me to collect data in the Yucatan. Special thanks to Chip Gerfen and John Lipski for bringing these to my attention and supporting my applications.

To my parents, Jim and Terry Michnowicz: for as long as I can remember, you made the importance of education clear, and your unfailing support and encouragement have meant more to me than you know. Without the foundations you gave me, and your continuing support, none of this would be possible. Thank you for everything.

Finally, to my wife Stephanie, whose encouragement, support, and sacrifice have made it possible for us to put our lives on hold for four years. Anyone who has written a thesis knows that it is an emotional rollercoaster, and no one has supported me more through the daily highs and lows that come with completing a Ph.D. Your sense of humor and drive has pushed me when I thought I could not go on, both in this dissertation and in life, and I could not ask for a better partner. You have been my inspiration every day, and this achievement is as much yours as mine.
Chapter 1
Introduction

1.0 Overview

People share information about their personal histories, family background, education, and sense of identity in a number of ways. These expressions of self may include such outward signs as dress, choice of friends, type of vehicle, or choice of activities. Likewise, speakers also express their identities, both consciously and subconsciously, through the language they use. Language is a reliable way to differentiate speakers by age, gender, and social class (Chambers 2003). While there is likely to be a great deal of linguistic variation among individuals, groups of speakers (i.e. social classes, generations) will tend to speak in similar ways. In this way speakers identify themselves as belonging to one group or another. (Coulmas 1997).

This dissertation investigates how social (non-linguistic) groups are identified through linguistic variation in the dialect of Spanish spoken in the Yucatan peninsula of Mexico. Specifically, it examines the correlations between the variables of age, gender, class, and Mayan/Spanish bilingualism with linguistic variables identified in previous studies of Yucatan Spanish as characteristic of the dialect (Alvar 1969, García Fajardo 1984, Lope Blanch 1987, Yager 1982, and Yager 1989, among others). These linguistic variables include:
1. The labialization of nasals in absolute final position (before a pause), i.e. /pa:n/ > [pam]. Compare ‘standard’ Spanish [pan].

2. The presence of voiced stops /b d g/ in phonetic contexts where ‘standard’ Spanish prefers a fricative variant [β ð χ]1. Compare ‘standard’ [toðo] and Yucatan Spanish [todo].

3. The aspiration of voiceless stops /p t k/, an allophone generally lacking in ‘standard’ Spanish. Yager (1984 50) reports that aspiration occurs primarily in emphatic speech, and most commonly with /k/ > [kʰ], i.e. /ka:sa/ > [kʰasa]2. This dissertation analyzes pilot data from aspirated [kʰ] in order to determine if aspiration is an important variable for these speakers of Yucatan Spanish.

4. The insertion of hiatus where ‘standard’ Spanish disfavors it. For example, Spanish generally resyllabifies final consonants as onsets of the following syllable when that word begins with a vowel, i.e. los amigos. Compare ‘standard’ [lo.sa.mi.gos] to Yucatan [los.a.mi.gos]. Likewise a final vowel generally elides into a following vowel without hiatus, i.e. mi hijo. Compare ‘standard’ [mi.xo] to Yucatan [mi.i.xo]. This break in

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1 Note that while the term ‘fricative’ will be employed in this dissertation for the sake of simplicity, the non-stop variants are more like approximants for most speakers of Yucatan Spanish.

2 These aspirated consonants should not be confused with glottalized stops [k’ t’] which occur very infrequently and primarily among Mayan speakers employing Mayan terms in Spanish (Lope Blanch 1987). Given the sporadic nature of glottalized stops and the fact that they are a Mayan-dominant bilingual phenomenon, these sounds will not enter into the present analysis.
hiatus is often identified as glottal stop insertion\(^3\). The present analysis will focus on intervocalic contexts across word boundaries, and will consist of pilot data from several speakers in order to determine the importance of [?] in the dialect.

### 1.1 The linguistic importance of Yucatan

This dissertation addresses the interplay of social and linguistic variables in the dialect of Spanish spoken in the Yucatan peninsula of Mexico\(^4\). To date, Yucatan has received relatively little attention in the field of Spanish linguistics. Of the handful of published studies, the majority represent earlier trends in dialectology. In other words, they are based on the author’s impressions or on data collected from a few speakers, and are primarily descriptive in nature\(^5\). The Yucatan is, however, worthy of increased scientific linguistic scholarship. Several factors make Yucatan Spanish of interest to linguists.

First, Yucatan Spanish exists in a situation of long-term language contact with an indigenous language, Yucatec Mayan. Yucatec Mayan is part of the Yucatec-Lacondon branch of the Mayan language family, which also includes Lacondon Mayan and Chan

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\(^3\) Whether this actually is the insertion of a glottal stop, or the maintenance of hiatus where ‘standard’ Spanish disfavors it, for the sake of simplicity the linguistic variable (?) will be used to signify the presence or absence of this feature.

\(^4\) Note that in using the term ‘dialect’, this work does not assume that there is only one way of speaking in the Yucatan. Quite the contrary, as the variationist framework of this study requires, variation is inherent in all language. Still, the term ‘dialect’ will be used in reference to the linguistic traits that unify Yucatan, and therefore separate it linguistically from its neighbors.

\(^5\) There are, of course, exceptions to this statement, such as Yager (1989), and Solomon (2000). These quantitative works will be addressed further in chapter 2.
Santa Cruz Mayan, and is spoken within the Mexican states of Yucatan, Campeche, and Quintana Roo (historically all part of the province of Yucatan), as well as in parts of Belize (Gordon 2005). For the sake of brevity, Yucatec Mayan will be referred to as simply ‘Mayan’ throughout this dissertation. Mayan is the second most spoken indigenous language of Mexico, after Nahuatl (Lasta 1997, p. 14); Figure 1 shows the major indigenous languages of Mexico, demonstrating that Mayan represents the single largest block of the same language (#38 on the map).
Figure 1: Linguistic map of Mexico, showing the Mayan-speaking area in the Yucatan (38 on the map). Map taken from Gordon (2005). Used with permission.
Until very recently, Mayan speakers outnumbered Spanish speakers in the peninsula, and there were few (if any) Spanish speakers that were not exposed to Mayan and Mayan-Spanish bilinguals on a regular basis (Lipski 1994, 81). While a complete treatment of contact phenomena in the Yucatan is out of the scope of this work, which focuses on a variationist sociolinguistic study of phonetic variables in Spanish, the fact of language contact in the peninsula has no doubt played some role in the development of the modern dialect. Importantly, as an isolated variety in contact with an indigenous language, the study of Yucatan Spanish can offer possible answers to wider questions of the formation of Latin American Spanish and dialect creation and maintenance.

Second, for most of its history, Yucatan has been cut off, physically and politically, from the rest of Mexico. The lack of contact with the linguistic and cultural norms of the capital in Mexico City has had two important effects on Yucatecan society. One of these is a sense of regional pride and independence, of ‘differentness’ with regard to the rest of Mexico. The other is that, isolated from close contact with the speech of Mexico (and indeed much of the rest of Spanish America), the Spanish spoken in Yucatan was able to develop along local lines of prestige. It will be argued later that both of these factors have had important linguistic consequences for the dialect.

Third, modern Yucatan is undergoing a boom in development and immigration. Two factors play a role in this growth. First, the rapid rise of Cancun and the Riviera

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6 While net migration between 1995-2000 is zero in Yucatan, equal to the national average in Mexico, it is still one of 15 Mexican states with stable or growing populations, compared with 18 that have lost population. Counting all of the states situated on the peninsula, Yucatan, Campeche, and Quintana Roo, the overall growth rate is 2.9% (INEGI 2000). What is important is not so much the overall numbers of immigrants within the state of Yucatan itself, but rather the perception that the region is experiencing growth, both in population and in the economy.
Maya as an international tourist destination; although these areas are located in the neighboring state of Quintana Roo, they have impacted the tourist industry on the entire peninsula. A second area of growth occurred after the devastating Mexico City earthquake of 1985. Residents of central Mexico, fleeing both the natural disaster and increasing crime and poverty in the capital, began moving their families and businesses to other parts of Mexico, including the Yucatan. In addition, today Yucatan is home to numerous factories, *maquiladoras*, of the type found on the U.S.-Mexican border. An increase in immigrants from other regions of Mexico can, as demonstrated later, impact the social dynamics in the peninsula, which can in turn affect the maintenance of or shift from the regional dialect. Importantly, the rapid demographic shift over the last few decades has led to an equally rapid series of linguistic changes within the dialect, as decreased isolation leads to the ‘standardization’ of many Yucatan variants, while at the same time encouraging the adoption of one feature [m] as a marker of local identity.

As mentioned earlier, Yucatan Spanish represents an understudied dialect of one of the most linguistically studied countries in Latin America. A scientifically based, quantitative analysis of this and other dialects like it can improve our understanding of language change, dialect formation and maintenance, as well as provide important data for analysis in theoretical linguistics. As this dissertation will show, Yucatan Spanish contains features that occur only rarely in other Spanish dialects, but that are relatively common even among monolingual Spanish-speakers in the Yucatan. These data can be of importance to theories of language change, phonological universals, and, as an area of widespread bilingualism with an indigenous language, the development of Latin American Spanish. Likewise, this dissertation is the first variationist study of these
‘typical’ phonetic variables in Yucatan Spanish, and as such furthers the theory by applying the variationist paradigm in a non-English context that is in contact with an indigenous language, an understudied linguistic situation in the variationist literature. Finally, as mentioned previously, Yucatan Spanish is at a crossroads, as recent demographic change has been accompanied by a rapid change away from most ‘typical’ Yucatan variants, while at the same time encouraging the adoption of a local variant [m] as a sign of regional identity. In the same way that Dominican speakers use a stigmatized variety of Spanish as a marker of cultural pride (Toribio 2000), urban Puerto Rican speakers across the island emphasize a previously rural feature (velar rr) (Holmquist 2005), and language and regional/political identity are joined for speakers of Catalan in Spain (Laitin 1989), yucatecos express their cultural heritage and their sense of ‘differentness’ from the rest of Mexico via their language use.

As this discussion demonstrates, Yucatan Spanish is of importance to theoretical linguists, dialectologists, and sociolinguists. A brief examination of the sociolinguistic profile in the Yucatan will allow the historical contextualization of the dialect and permit a better understanding of the linguistic data to be presented.

1.2 Sociolinguistic profile of Yucatan

As with any region and dialect, the Spanish of Yucatan is the result of a combination of historical, social, and purely linguistic factors. All of these factors can impact the linguistic system in various ways. For example, Lipski (1994, pp. 51-55) has demonstrated the importance of colonial demographics in the examination of a particular
dialect. The number of Spanish settlers in Latin America was relatively small throughout the entire colonial period. This was certainly the case in the Yucatan, which received little European or African immigration compared with the rest of Mexico (Weber 1980, 173). For a majority of their history, the Spanish-speaking cities of Mérida, Valladolid and Campeche\(^7\) were isolated islands of Spanish surrounded by a sea of Mayan speakers\(^8\) (Mosely 1980, 86). During the formative colonial period, Spanish speakers made up a relatively small percentage of the overall population of the peninsula. For example, in 1580, several decades after the initial conquest of Yucatan, the population consisted of approximately 2000 Spaniards, 300 sub-Saharan Africans, and 200,000 Maya (Mosely 1980, 102). Thus during the important formative period immediately following the conquest, Spanish speakers made up only 1% of the total population in Yucatan. In the following centuries, Yucatan would see a rise in Spanish population and a decline in native inhabitants, as the Maya fell victim to disease and famine\(^9\). For example, one hundred and twenty years later, in 1700, the population was divided between 20,000 non-indigenous (mostly Spanish), and 182,000 Maya (Mosely 1980, 102). Two hundred years after the conquest, Spanish speakers still accounted for only 10% of the total population. A century later, in 1794, Yucatan witnessed a population explosion, with the non-indigenous population soaring to 103,000, along with a rebounding of the Mayan

\(^7\) Although the peninsula is now divided into the three states of Campeche, Yucatan, and Quintana Roo, historically they belonged to one political entity known as Yucatan.

\(^8\) Lipski (1994, 80-81) uses similar language to describe the long-term prevalence of Mayan in the Yucatan.

\(^9\) The estimated Mayan population at the time of the conquest was 2.5 million. By 1550 the population had fallen to approximately 200,000 (Restall 1997, p. 174), a fraction of the pre-Columbian numbers, but still vastly outnumbering the peninsula’s Spanish population.
population to 254,000, a number higher than at any time since the conquest (Mosely 1980, 104).

While the population is quite different today, with a majority of inhabitants self-identifying as Spanish-speakers in the 2000 census, 37% of the residents of Yucatan still report speaking an indigenous language (i.e. Mayan). Almost 10% of those speakers are functional monolingual speakers of Mayan (INEGI 2000). As these figures show, while the Spanish-speaking population has steadily increased, Yucatan is far from being a monolingual area. Rather, Spanish has been in constant contact with Mayan throughout the modern history of Yucatan. This contact, both macro (between two cultures, Spanish

10 It is likely that this number is somewhat underreported, given the stigma that some speakers attach to being known as a ‘Mayan-speaker’. Additionally, some speakers do not consider their language to be authentic. For example, several subjects in the present study stated that they did not speak ‘real’ Mayan, like their ancestors did. But rather they spoke a Spanish-influenced version that they viewed as having taken the place of ‘true’ Mayan.
and Mayan), and micro (daily interactions between individual Spanish and Mayan-speakers, many of whom are employed as domestic servants or day laborers) has resulted in most *yucatecos* being exposed to Mayan-influenced Spanish from an early age (Lipski 1994, p. 81). This close contact between Mayan and Spanish has led several researchers to propose a Mayan origin for non-standard variants in Yucatan Spanish.

Another important factor in the development of Yucatan Spanish is the isolation, cultural, political, and linguistic, in which the peninsula has existed until the very recent past. As mentioned previously, the process of conquest and subsequent Hispanicization of the Yucatan was never completed, as attested by the large numbers of Mayan speakers that exist to the present day\(^\text{11}\). Likewise, traditional Mayan customs and traditions, often veiled in Western (Catholic) terminology, continue throughout the rural areas of the peninsula (Mijangos Noh 2001, p. 125). The early colonial history of Yucatan saw the peninsula ruled administratively from Honduras and Guatemala, before finally being transferred to the control of Mexico City in 1560 (Quezada 2001, pp. 74-75). Although officially part of the *Audiencia de Mexico*, in reality in most matters Yucatan dealt directly with Spain and the Council of the Indies. For example, the administrative head of Yucatan, with the titles of governor and captain general, was appointed not by the Viceroy in Mexico, but rather directly by the Crown in Spain (Mosely 1980, p. 94). Linguistically, this lack of regular contact with the rest of Mexico led, in part, to the Spanish of Yucatan having more in common with Central American dialects than with

\(^{11}\) Barrera Vasquez (1937) sums up this situation, stating “los mayas no fueron conquistados lingüísticamente; más bien ellos resultaron conquistadores en este caso” ‘the Mayans were not conquered linguistically; rather it was they that were conquerers in this case’ (p. 9).
those of Mexico (Lipski 1994, p. 274). This political and linguistic isolation was due in large part to the physical remoteness of the peninsula. The difficult terrain in the Isthmus of Tehuantepec, connecting the Yucatan peninsula to the rest of Mexico, made overland travel practically impossible until the middle of the twentieth century. It is not until the early 1960’s that rail service was established between the Yucatan and the rest of Mexico (Quezada 2001, p. 238). Previously, travel to Mexico had involved travel to a Yucatecan port such as Sisal or Progreso, a sailing voyage of several days to Coatzacoalcos or Veracruz, followed by another overland journey to Mexico City (Quezada 2001, p. 239). The much faster travel offered by modern jet airliners arrived in Yucatan at approximately the same time as regular train service, but air travel was economically impossible for all but the wealthiest yucatecos (Quezada 2001, 239). The isolation of Yucatan, both politically and physically, from the rest of Mexico is exemplified by the fact that the Mexican Revolution was delayed five years in arriving to the peninsula. Communication with Mexico was so poor that it was difficult to obtain news of the events of the rest of the country, let alone join either faction in fighting the Revolution (Joseph 1980). Travel out of the peninsula is still a luxury today for many inhabitants of Yucatan.

Yucatan’s strong sense of identity and regional pride has twice manifested itself in a politically dramatic manner. Following the independence of Mexico from Spain in 1821 a series of disputes arose between Yucatan and the central government in Mexico City. These political disagreements centered on the role of the central government in the newly proclaimed Republic of Mexico: Yucatan wanted to maintain its autonomy as part of a federal republic, while centralist forces were gaining strength in Mexico City. This
important difference, regionalism versus centralism, led Yucatan to declare itself independent of Mexico in 1835 (Quezada 2001, p. 131). Yucatan even looked to another renegade republic, that of Texas, for military assistance should the need arise. In August of 1842, Santa Anna, the military dictator in control of Mexico, sent Mexican troops to the Yucatan, only to be defeated by Yucatecan troops the following year (Quezada 2001, p. 132). Later, in 1846, Santa Anna, now at war with the United States, conceded certain rights to Yucatan, and the state was reincorporated to the Mexican Republic (Quezada 2001, p. 134). Interestingly, Yucatan maintained neutrality in that war, and even offered itself for annexation to the United States during this time (Alisky 1980, p. 249). Following the Mexican-American war, relations once again soured between Mexico and Yucatan. During this time period, Yucatan was again functioning as a republic independent of Mexico. During a violent uprising by the Maya of the peninsula, the War of the Castes, Yucatan asked for military help from the United States and from Europe, but in the end was forced to allow Mexican troops into the peninsula to restore order (Alisky 1980, p. 250). This would mark the end of Yucatan as a politically independent nation, although the sense of Yucatecan identity and pride as separate from that of Mexico persists even into the present. Importantly, there is a feeling among many Yucatecans that they are fundamentally different from their compatriots in the rest of Mexico, a feeling fueled not only by historical facts, but also by cultural differences predicated on the Mayan past and the economic boom brought about by the large

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12 This situation is not unlike that in the southern United States, where the native residents often feel a sense of pride in their Confederate past. Similarly, just as northerners are known pejoratively as Yankees, Yucatecans refer to Mexicans from outside of the peninsula as huaches, a term that is reputed to derive from the sound of Mexican soldiers marching into Yucatan. (Joseph 1980, 150)
henequen plantations of the 19th and early 20th centuries. This attitude of distinctiveness was echoed by many of the subjects interviewed for this study. For example, one 89 year old woman expressing her disdain for the rest of Mexico referred to the fact that the United States did not annex Yucatan as una lastima, ‘a shame’.

Anecdotally, it is now common to see popular expressions of Yucatecan pride, such as bumper stickers, hats, and t-shirts with the motto orgullosamente yucateco, ‘proudly Yucatecan’, and t-shirts with local expressions, both in Mayan and in the local dialect. Many of these popular articles also display the flag of the Republic of Yucatan rather than the Mexican national flag. While these expressions of local identity and pride are superficial in nature and, like all fashions, are subject to rapid change, they appear to be indicative of a deeper regional pride. The results of a preliminary language attitude survey conducted as part of the present research confirm this, and demonstrate that the sense of local pride extends to linguistic pride in the regional dialect. The attitude survey was given to 10 of the subjects interviewed for this study; a copy of the questionnaire used can be found in Appendix C. While these results are preliminary, speakers present a clear preference for Yucatecan speech and identity. As can be seen on the questionnaire, subjects were asked to answer a set of the questions indicating their opinion on a scale of 1-5, where 1 represented 0%, and 5 indicated 100%. Four of the questions from the attitude survey are germane to the questions of Yucatecan identity and

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13 Yucatan would again seek union with the United States during the Mexican Revolution, arguing that they shared more in common with that country than with the rest of Mexico (Joseph 1980, 143)

14 Again, this is comparable to ‘southern pride’ in flying the Confederate flag, although without the racial overtones found in the United States.

15 The language attitude survey was initially conceived as a pilot for a larger study on attitudes toward the local dialect in Yucatan. The initial results of interest to the present discussion are included here.
its possible linguistic effects; the questions are presented along with a summary of the results in the following table.

<table>
<thead>
<tr>
<th>Question</th>
<th>Average result on scale of 1-5 (5=100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Spanish is spoken in Yucatan</td>
<td>4</td>
</tr>
<tr>
<td>I like the dialect (sayings, etc) in Yucatan</td>
<td>4.6</td>
</tr>
<tr>
<td>I like the accent in Yucatan</td>
<td>4.6</td>
</tr>
<tr>
<td>I prefer the Spanish spoken in other regions to that of Yucatan</td>
<td>1.3</td>
</tr>
</tbody>
</table>

First, these speakers feel that overall good Spanish is spoken in Yucatan, with an average score of 4 out of 5. No subjects answered lower than three on this question. The fact that this question scored lower than the following two questions indicates that speakers do feel some pressure from ‘standard’ dialects, since they do not indicate that everyone speaks properly in Yucatan. The most common distinction given between ‘good’ Spanish and ‘bad’ Spanish was based on socioeconomic class (higher classes speak better) or rural versus urban speakers (many of the rural speakers are characterized as speaking mostly Mayan and therefore not having a good command of Spanish). As indicated by their identical averages, most speakers considered dialect and accent to be comparable. It is interesting to note that although fewer speakers considered Yucatan Spanish to be ‘good’, the same speakers admitted liking the local dialect and accent. This attitude suggests that although there is some pressure to standardize, their linguistic identity as *yucatecos* is important to these speakers. Finally, it is clear that these speakers
overwhelmingly prefer Yucatan Spanish to that spoken in other regions. No speaker indicated higher than 2 for this question\textsuperscript{16}. In fact, when asked in what region people speak the best Spanish, a majority answered in southeastern Mexico, i.e. in Yucatan\textsuperscript{17}.

Finally, subjects were asked to define themselves as either Mexican or Yucatecan. The ten subjects could have answered this question one of three ways: they feel more Mexican, they feel more Yucatecan, or they consider themselves to be both Mexican and Yucatecan. The results of this question are seen in the following table.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|}
\hline
Identity & Number of subjects ($n=10$) \\
\hline
More Mexican & 0 \\
More Yucatecan & 7 \\
Both (Mexican and Yucatecan) & 3 \\
\hline
\end{tabular}
\caption{Sense of identity for 10 subjects}
\end{table}

As seen in Table 2, speakers’ feelings about Yucatan Spanish are mirrored in their sense of personal identity. None of the speakers identified themselves as more Mexican than Yucatecan. Rather, a majority self-identified as feeling more \textit{yucateco}. Three of the speakers (206, 207, and 223\textsuperscript{18}) stated that they felt an affinity to both identities, Mexican and Yucatecan. While the small number of subjects given the linguistic attitude questionnaire makes these results far from conclusive, they do provide a more detailed

\textsuperscript{16} This question is based on answers from nine subjects; subject 223 began speaking on other topics during the language attitude questionnaire and did not answer this question.
\textsuperscript{17} Many speakers initially answered that the ‘best’ Spanish was spoken in Spain, but when asked specifically about Mexico agreed that the ‘best’ Spanish was spoken in southeast Mexico.
\textsuperscript{18} Subject 206 worked as an employee of the Mexican government during most of his career. Subjects 207 and 223 are lower-class workers, respectively employed as a handyman and a security guard.
sense of local pride and Yucatecan identity. A traveler to Yucatan will find that these opinions are widely held, and therefore are in a position to influence language use in the peninsula. The connection between Yucatan Spanish and Yucatan-ness echoes the view of Le Page & Tabouret-Keller (1985), that language use is an “act of identity” (p. 14) (cf. Tabouret-Keller 1997 and Chapter 6 of this dissertation for further discussion).

Importantly, the historical isolation in which the Yucatan, and therefore Yucatan Spanish, has existed is rapidly diminishing. With the rise of Cancun in neighboring Quintana Roo as the premier tourist destination in Mexico, the Yucatan has seen a rise in tourism, both foreign and domestic. An additional source of immigration is the manufacturing boom underway in Yucatan as the result of the increased presence of factories, or maquiladoras, in the local economy (Biles 2004)\textsuperscript{19}. These factors, combined with increasing violence and pollution in Mexico City, have led to what one internet forum calls an ‘invasion’ of chilangos\textsuperscript{20}, in which immigrants from Mexico City are referred to as huaches, the local pejorative term for non-Yucatecan Mexicans\textsuperscript{21}. The overwhelming impression in Yucatan, echoed by many of the subjects interviewed for this study, is that the Yucatecan way of life is under assault by these new arrivals from central Mexico. Census data in part confirms their feelings. In 1990, there were 17,742 immigrants from the Distrito Federal (i.e. Mexico City) living in the Yucatan, 15,695 of which were in Mérida (INEGI 1990). Ten years later the 2000 census reports 25,434

\textsuperscript{19} Biles (2004) demonstrates that the decade from 1990-2001 witnessed an increase in the number of maquiladoras in Yucatan from 13 to 145, located throughout the state (p. 520).


\textsuperscript{21} Likewise, natives of Yucatan that live for a period in other areas of Mexico and return to the peninsula having lost Yucatan customs and the yucateco dialect are referred to as a yucawach, reflecting the disdain for people that give up their Yucatan identity (Amaro Gamboa n.d.).
immigrants from Mexico City in Yucatan, 22,958 of which lived in Mérida (INEGI 2000). Thus, during that ten year period Yucatan witnessed a 43.4% increase in immigration from the capital, and Mérida experienced an increase of 46.3%. Residents of Mérida are acutely aware of this increase. Immigrants from Mexico City are often blamed for everything from rising crime rates, increased traffic, and the loss of local customs. For example, speaker 104, discussing an increase in crime in Mérida, notes:

[esas cosas, i.e crime] “no sucedían hace cinco años aquí, pero yo pienso que esas personas son gente de fuera; no son de, de Mérida. Entonces, tal vez están comenzando a formar sus bandas por aquí, no sé...”

Likewise, speaker 229 states:

“... porque nosotros no queremos a los huaches, decimos huaches. Y no nos decimos nosotros mexicanos, decimos yucatecas...yucateca, no soy mexicana...”

And speaker 219 explains:

“...ves que todavía aquí a los mexicanos les llaman huaches...no, no sea, no soportan, no los soportan mucho...o sea ellos tienen, vaya, los yucatecos prefieren más tratar con un americano, por ejemplo, que con un huach, como le llaman

While the actual causes of these changes lie well outside the scope of this work and linguistics in general, the impressions that people have regarding outsiders in Yucatan can be of great importance to maintenance or change in the local dialect.

As previously discussed, Yucatan Spanish is a dialect that has been in close contact with an indigenous language, Mayan, over the last 500 years. Mayan is still widely spoken today, and 37% of the population is bilingual in Spanish and Mayan (INEGI 2000). Additionally, Yucatan was culturally and geographically isolated from the rest of Mexico until the latter half of the 20th century, a situation which has led to strong
feelings of regional pride and identity on the part of *yucatecos*, as demonstrated by the preliminary results obtained from the language attitude questionnaire. In recent decades, however, the historic isolation has decreased due to economic factors, and speakers of Yucatan Spanish now interact daily with speakers of other dialects. Lipski (1994) notes that in order for Mayan-influenced traits to enter the linguistic mainstream, “a fundamental shift in the sociodemographics of Yucatan would have to take place” (p. 81). It appears that, with the combination of immigration from outside the peninsula and the entrance of the children of poor, Mayan-speaking families into the middle/upper classes, such a shift is taking place. Thus this study is ideally placed in time to capture these demographically-driven linguistic changes as they happen.

1.3 Goals and hypotheses of the study

After reviewing the social and historical backdrop in which Yucatan Spanish arose and exists today, what follows are the specific goals for this study. The study is designed to:

1. Discover the patterns of use for ‘typical’ Yucatan Spanish dialect markers, as defined by previous studies, within the variationist framework.

2. Within the variationist framework, evaluate the possibility that Yucatan Spanish represents a case of language change in progress. Also, using the sociolinguistic data collected for the study, determine to the extent possible the loci of linguistic change within the Yucatan speech community.
3. Using a multivariate analysis of the data and insights gained from the literature on language contact to determine the possible role, if any, of regular Mayan-Spanish bilingualism on Yucatan Spanish, specifically the use of typical dialect markers. The goals listed above lead to the following three hypotheses that will be tested in this study. While it is unlikely that all of the hypotheses will hold for all of the variables involved, for the sake of this study a directional hypothesis is assumed.

1. The variables studied in this work will exhibit social stratification (class, age, gender), and are important as social markers in Yucatan Spanish.

2. If the frequency of use for the variables in question is increasing, it is due to speakers adopting traditional Yucatan variants as markers of local identity.

3. Bilingualism with Mayan will correlate with a higher frequency of typical Yucatan variants.

The rest of the study will be structured as follows. Chapter 2 consists of a review of previous research in Yucatan Spanish, with an emphasis on previous descriptions of the phonetic variables studied in this dissertation. Chapter 3 briefly reviews variationist sociolinguistic research and its applicability to Yucatan Spanish. Chapter 4 details the methodology of the study, including the sociolinguistic interview, an overview of the participants, as well as the variables chosen for statistical multivariate (VARBRUL) analysis. Chapter 5 consists of the results of the analysis for each variable. Chapter 6

22 A detailed study of Mayan-Spanish contact will be reserved for future research. The present study will address this issue through correlations between bilingualism/knowledge of Mayan and dialect markers in Yucatan Spanish.
presents a discussion of the results of the study, as well as identifying important conclusions, remaining questions, and areas for further research.
Chapter 2

Previous studies on Yucatan Spanish

2.0 Research on Yucatan Spanish and the variationist paradigm

The previous chapter contextualized the social and historical environment in which Yucatan Spanish has evolved and exists today. This chapter presents a review of previous research on Yucatan Spanish, from earlier studies in traditional dialectology to more current work in quantitative sociolinguistics. Special attention is paid to the treatment of the phonetic variables studied in this dissertation.

2.1 Previous Research on Yucatan Spanish

While there is a somewhat substantial body of previous research on Yucatan Spanish, the vast majority of early studies are qualitative and purely descriptive in nature, usually centering on lexical items of interest, although with some basic comment on perceived phonological oddities (e.g. Nykl 1938, Suarez 1945/1979). There is also a tendency in early studies to attribute any ‘non-standard’ form to contact-induced influence from Yucatec Mayan. Following is a brief review of these early studies, before examining later work founded in linguistic theory and sound data collection techniques.

2.1.1 Early dialectical studies on Yucatan Spanish

One of the earliest published studies on Yucatan Spanish is Barrera Vasquez (1937). This work presents little data of interest to the present dissertation, consisting
primarily of lexical borrowings from Mayan into Spanish. Barrera Vasquez does mention several syntactic variables of interest, e.g. “voy con el doctor” for “voy a ver al doctor” (p. 9), a structure commonly heard today. With regard to phonetic variables, Barrera Vasquez mentions glottalizations in Yucatan Spanish as well as the “peculiar entonación” of the dialect as influences from Mayan (p. 9).23

Another early study on Yucatan Spanish is Nykl (1938). Nykl makes various observations on the dialect, based on his interactions with speakers in the Yucatan. While the majority of the work is dedicated to the few lexical borrowings in Spanish and Mayan, of little interest to the present research paradigm, Nykl does briefly address some phonological variation, mentioning that this is the most interesting way in which Mayan has influenced the Spanish of Yucatan (p. 215). Aspects of Yucatan Spanish that Nykl attributes to influence from Mayan include a glottal “click” (*chasquido*), the intonation of the dialect, and the *consonantes heridas*, a term which refers to aspirated or ejective stops in Mayan (p. 215-216). These “strong” stops from Mayan give the native Mayan speakers an unmistakable accent in Spanish, which Nykl describes as “*estar oyendo hablar en castellano a un comerciante alemán*” (p. 217). While the observation is not quantified, it does suggest that one of the most noticeable traits of Yucatan Spanish at that time was the use of these aspirated consonants (*p t k*)24, along with the maintenance of hiatus (or [*?*] insertion). Nykl makes no mention of (*-n*) or (*b d g*).

23 Suprasegmental features of Yucatan Spanish, such as intonation, are reserved for future research.
24 This dissertation will follow the standard practice in the variationist literature of using parentheses ( ) to designate linguistic variables, a unit for which multiple realizations are possible, i.e. more than one way to say the same thing (Silva-Corvalán 2001 p. 86). Phonemes are designated by bars //, and allophones by brackets [ ].
Suarez (1945/1979) presents an overview of Yucatan Spanish, with sections on the history of the peninsula, Mayan language, phonetics and phonology and Mayan influence on these systems, morphology, word meanings, and syntax. With regards to phonology, Suarez is careful to list multiple pronunciations where such variants exist, although some dialect markers addressed in later studies, such as (-n), are not mentioned. Interestingly, the only mention of (b d g) is that these phones tend to weaken or disappear intervocally (pp. 62-63). As will be demonstrated, this contrasts with later studies that emphasize the occlusive nature of these consonants in Yucatan Spanish. Suarez includes the following comment on (?:

“Esta misma glotalización de observa frecuentemente en el lenguaje popular en vocales de sílabas intermedias cuando se desea poner énfasis en ciertas frases o voces exclamativas o afectivas: MA’RE! (MADRE), MI BI’DA (MI VIDA), TA’ BUENO (ESTA BUENO). En todos los casos el relieve natural de la sílaba tónica en la palabra o frase enfática se realza [sic] más por la glotalización” (p. 78).

Suarez also notes the “fuerza explosiva” employed in the production of (p t k) (p. 78). This explosive force likely refers to both Mayan ejective consonants /p’ t’ k’/ and aspirated [pʰ tʰ kʰ]. While Suarez avoids the impressionistic model of Nykl (1938), a major weakness of the study is the lack of specificity with regard to how the data was collected. Suarez does not explain the number of subjects involved, their demographic information, nor the manner of data elicitation, all of which can greatly affect the results obtained. This lack of information makes it difficult to directly compare speakers over real time. Still, the otherwise thoroughness of the data provides a good point of departure for current research on Yucatan Spanish.
Mediz Bolio (1951), in a published speech given at the Academia Mexicana de la Lengua, returns to the descriptive, primarily lexical, model of study seen in Nykl (1938). Mediz Bolio, a native of Yucatan, stresses the influence of Mayan on Spanish, comparing the hybridization of language in Yucatan to cultural and racial mestizaje (p. 12). In other words, the mixing of Spanish and Mayan linguistic traits has resulted, for Mediz Bolio, in a new, almost creolized tongue born of the rudimentary interlanguage used during the first decades of Spanish-Mayan contact (p. 10). While it is not clear that this claim has historical merit, and in fact Yucatan Spanish today shows some traits consistent with long term language contact, rather than creolization\(^25\), it is clear that the exaggerated importance of Mayan on Spanish plays a role in many of the impressionistic studies of Yucatan Spanish. With regards to phonetics/phonology, Mediz Bolio does not give specific examples, but rather mentions that the intonation of Yucatan Spanish is that of Mayan\(^26\), stating “…los yucatecos hablamos el español con fonética maya, directamente impuesta…” (p. 19). He notes that while this trait may be more common in lower, Mayan speaking classes, it is found in all Yucatecan speakers, and as such is an important dialect marker (p. 19).

\(^{25}\) Creole languages tend to have reduced phonology and morphology, as well as a simplified syntax. Yucatan Spanish does not show any of these traits. See Thomason & Kaufman (1988) and Kaye & Tosco (2001) for further discussion of creoles.

\(^{26}\) Intonation is frequently mentioned by subjects of the present study as a distinguishing factor in Yucatan Spanish. As mentioned previously, intonational patterns and related phenomena, such as the lengthening of stressed syllables, will be addressed in future research. Initial impressions from the present data suggest that what speakers identify as intonation may be the acoustic impressions caused by the combination of the lengthening of stressed syllables and the maintenance of hiatus across word boundaries.
2.1.2 Towards a quantitative analysis of Yucatan Spanish

With the publication of Alvar (1969), research on Yucatan Spanish begins to enjoy the benefits of empirical linguistic study. Alvar is critical of early studies, in particular that of Nykl (1938), and his study was designed to address the impressionistic nature of previous work. In 1967, Alvar interviewed 10 speakers in various cities and villages around the Yucatan (p. 160-161). Language samples were elicited with a language questionnaire, and were recorded for later analysis. Although Alvar does not include the questionnaire used in the study, it appears from comments throughout that it consisted of word naming tasks designed to elicit specific sounds. In spite of a more advanced methodology involving the recording of subjects, this study shows hallmarks of traditional dialectology studies. The subjects are, with one possible exception, low class speakers selected for their lack of travel outside of the region; no attempt was made to balance the subjects for age, gender, or social class.

Unlike previous studies, Alvar (1969) does present a qualitative analysis of Yucatecan phonetic variants, giving the relative frequencies of each variant for several (but not all) phonetic variables. For the variable (-n), Alvar notes that the possible articulations include [ŋ], only found among monolingual Spanish-speakers, “frequent” [Ø] with nasalization of the preceding vowel, and [m], produced by all of the informants with “abrumadora frecuencia” (p. 168)\(^2\). Alvar notes that while velarization and final

\(^2\) Alvar (1969) does not provide quantitative data on (-n), nor does he comment on the standard articulation [n]. Note also that throughout, [Ø] refers to nasal deletion.
nasal deletion link Yucatan Spanish with the rest of Mexico and southern Spain, [m] is an indigenous sound with roots in Mayan (p. 169).

Regarding the voiced stops (b d g), Alvar (1969 p. 165) notes that

“en general, puede decirse que los dos alófonos castellanos de cada uno de los fonemas /b/, /d/, /g/ se realizan simplemente como b, d, g oclusivas; las correspondientes articulaciones fricativas son virtualmente desconocidas...”

For (b), seven of the ten informants produced only [b], while the remaining three produced some [β] (p. 164). The stop variant of (d) is even more common, with only one subject producing tokens with [ð] (p. 164). There is a clear preference among these ten subjects for the stop variants with (b d). The velar (g) also arises more frequently as [g] than [γ], but not as often as for (b d); six of the ten informants produced only [g], while one informant showed only fricative [γ]. The data demonstrate that the quote above is too strong of a statement, since fricatives are not nonexistent for these subjects. Still, there is a distinct preference among these speakers for stop variants of (b d g).

Alvar (1969) comments only briefly on the aspirated consonants (p t k), noting that he found only infrequent tokens of [tʰ], and no cases of [pʰ]. For these speakers, aspirated [kʰ] is the most common of the three, frequent but not regular in the data (p. 177). With respect to [kʰ], Alvar notes that the aspiration is greater than that found in standard Spanish, but does not reach the level found in initial (k) in English (p. 177). Articulatorily, Alvar states that aspirated [kʰ] is produced further back than standard Spanish [k], and is not found before back vowels /o u/ (p. 177). Alvar (1969) makes no mention of (ʔ).
In general, Alvar presents a more conservative picture of the dialect with regards to Mayan influence, recognizing that Yucatan Spanish forms part of a larger Mexican linguistic region, albeit with some phonetic variants that distinguish it from other dialects. Importantly, it represents a first step towards empirical, quantitative study of Yucatan Spanish, necessarily lacking in earlier studies due to the methodologies of the time.

Cassano (1977) offers comments on Mayan influence on Yucatan Spanish. While Cassano (1977) does not collect any new data, he provides additional analysis of several variables presented in Alvar (1969). Using data from secondary sources, Cassano (1977) argues that in situations of language contact, it is important to examine the inventories of both languages involved to help determine possible areas open to influence. Interestingly, he provides the phonological inventories of three Mayan languages, none of which is Yucatec Mayan, the language spoken in the Yucatan, noting that data for Yucatec was not available (p. 101). Cassano (1977) does recreate a ‘general Mayan’ phonology, however, based on other Mayan languages and comments from previous studies (e.g. Barrera Vasquez 1937 and Suarez 1945) (pp. 98-99). With regard to the variables (b d g), Cassano summarizes the arguments presented in Alvar (1969), and based on a brief comparison of Yucatan Spanish to other dialects with voiced stops in certain phonetic contexts28 (Costa Rica, Mexico, Argentina, Bolivia, Ecuador, Colombia, Guatemala, Honduras, Nicaragua, and El Salvador) (p. 100), as well as the phonetic inventories of three Mayan languages, determines that [b d g] are an internal development of Spanish

28 These include stops following liquids, sibilants, and semi-vowels (Cassano 1977 p. 100).
Cassano however, like previous studies, does not rule out possible Mayan influence on this internal development (p. 104).

For the variable (-n), Cassano (1977) briefly notes that [m] also arises in parts of Colombia (p. 105). While he does not address the question further, the article seems to imply that the change [-n] > [-m] must be an internal development of Spanish, due to its existence outside of Yucatan (p. 113).

Yager (1982) continues the tradition of empirical data collection and analysis with a study of 18 speakers from Merida, Yucatan. In order to obtain a more complete picture of the dialect as it is actually spoken, Yager included speakers of different socioeconomic classes and ages, and balanced the design for gender (p. 37). The data consist of recorded free conversation and a language background questionnaire (p. 44). While Yager’s methodology makes use of advances in variationist sociolinguistics (cf. the following section and Chapter 3), the study consists primarily of a descriptive catalog of sounds in Yucatan Spanish. For sounds that only occur rarely outside of Yucatan Spanish, such as intervocalic voiced stops and final [-m], Yager discusses possible Mayan influence. His treatment of Mayan influence is also conservative, examining both internal and contact-induced possibilities for explaining sounds particular to Yucatan Spanish. The goal of the work was to describe the phonetic system of the dialect, and sociolinguistic variables do not form part of the analysis. Overall, Yager (1982) is a careful, well-documented study, and the data can serve as a point of comparison with current studies.

Yager (1982), like Alvar (1969), presents possible articulations of (-n): [n], which in this data is usually accompanied by nasalization of the preceding vowel (p. 77), [ŋ], more frequent than the alveolar, and also accompanied by nasalization of the vowel (p.
77), and occasional [Ø]. Yager states that the most common variant of (-n) is [m] with varying degrees of articulatory tension (pp. 77-78). These speakers also produced occasional instances of [m] word finally but utterance medially, e.g. ‘Yucatán que’ [ju.ka.tám.ke] (p. 78). Regarding possible Mayan influence on the labial variant of (-n), Yager demonstrates that that language also exhibits a final alternation between [ŋ] and [m] (p. 79), and argues that given the rarity of [m] outside of Yucatan, this sound is likely due to the influence of the indigenous language (p. 80).

For these speakers, Yager notes that both fricative and stop variants of (b d g) are common in Yucatan Spanish (pp. 54, 57, 59). Contra Alvar (1969), the speakers in Yager (1982) show a slight preference for [β ð]). Yager does not state the relative frequency of (g), only noting that both [g] and [γ] are common (p. 59). Also unlike Alvar (1969), Yager provides examples of the lenition of (d) and (g), e.g. ‘nada, pescado’ [náða] [peskáo] (p. 58) and ‘luego, agua’ [lwéo] [áwa] (p. 59). This data leads Yager to conclude that the stop variants [b d g] in positions where standard Spanish prefers [β ð γ] are not due to direct Mayan influence, but rather represent a pan-Hispanic possible variant. He does leave open the possibility of indirect Mayan influence, however, which may have favored the maintenance of the non-standard variants in Yucatan Spanish (p. 64).

For the voiceless stops (p t k), Yager notes a slight aspiration word initially and in emphatic speech (pp. 48-50). Aspiration occurred most often with (k), followed by (p) and in rare cases (t) (pp. 48-50). Given that Mayan also exhibits aspirated voiceless stop variants of (p t k), Yager concludes that indigenous language influence is likely for these sounds in Yucatan Spanish (p. 53)
Finally, Yager (1982) presents a brief description of (?) in Yucatan Spanish. Following Barrera Vasquez and Suarez, Yager notes that [?] occurs most frequently in word-initial position before a stressed vowel and word finally after a stressed vowel (p. 88). Yager speculates that the existence of [?] may be related to a general strengthening of hiatus in Yucatan Spanish, seeing parallels between the glottal stop, final [m], and stop [b d g] 29.

García Fajardo (1984) synthesizes methodologies from earlier studies, with a representative sample of speakers and quantitative data in the form of overall frequencies for phonetic variants. This study centers on the Spanish of Valladolid, a small city at the eastern edge of Yucatan State. Using similar variationist techniques to those employed by Yager (1982), García Fajardo interviewed and recorded 39 speakers, balanced for social class, gender, and age. The resulting data provide a clear picture of Valladolid Spanish vowels and consonants, with frequency data for the interaction of each linguistic and nonlinguistic variable.

In addressing the labialization of (-n), García Fajardo notes that [m] is very common in the sense that almost all of her informants produced the labial variant, although the relative frequency of [m] is not high (p. 75). She notes that while [n] and [m] may be coarticulated, e.g. [nm], the majority of the time the nasal is fully bilabial, ‘bien’ [bjem] (p. 76). For these speakers, [m] occurred in 34 of 39 informants, with

29 Yager (1982) does not expand on the idea of a fortition conspiracy in Yucatan Spanish and reserves it for future research. While the connection between the maintenance of hiatus and the stops [b d g] is understandable, it is not clear how Yager hopes to connect hiatus and [m], except perhaps as a preferred variant over [Ø], or for reasons of salience that will be discussed in Chapter 6. Still, the idea that Yucatan Spanish prefers a strong onset is interesting, and should be investigated further.
frequencies ranging from 5% to 40%, irrespective of age, gender, or social class; 72% of these speakers produced less than 20% [m] (p. 76).

For the voiced stops (b d g), García Fajardo (1984) found the stop variants [b d g] to be more frequent than the fricative (p. 38). For (b), all speakers produced [b], with a frequency range of 10% to almost 100% (p. 38). Lower class speakers produced more occlusives (62% of them producing [b] with a frequency of 70% or greater), while middle and upper class speakers behaved identically (33% producing [b] with a frequency of 70% or greater). Interestingly, middle aged speakers produced more [b] than either older or younger speakers, and [b] was more common among women than men (pp. 38-39). Data for (d) show the same general pattern: [d] was produced by almost all speakers, with a frequency range of 10% to 100%, and is more common for lower class, middle aged women. Stop [g] was less common, reaching a maximum frequency of 80% (p. 41). For social class and age, the pattern is the same; middle aged lower class speakers produced more [d]. For this variable, however, men produced slightly more stop variants than women (39% men vs. 33% women produced [g] with a frequency greater than 40%) (p. 41). García Fajardo also notes that (b d g) are on occasion relaxed by her speakers.

For García Fajardo, the aspiration of (p t k) and the insertion of [ʔ] are related phenomena, along with ‘glottalized’ consonants represented as [p’ t’ k’] (pp. 81-89). First, she notes that aspirated [pʰ tʰ kʰ] are often confused with glottalized [p’ t’ k’], given that aspiration may or may not be glottalized, and glottalized consonants may or may not be aspirated (p. 84). García Fajardo defines aspiration as:
“un periodo sordo, en general breve...[que] corresponde al tiempo que transcurre entre la emisión de la oclusiva sorda y el comienzo de la vibración de las cuerdas vocales...” (p. 84).

This definition makes it clear that she is referring to voice onset time (VOT), and is the same phenomenon of aspiration that appears in Yager (1982). Glottalized consonants, however are defined as:

“el aire que los labios de las cuerdas vocales, al cerrar la glottis, han impulsado hacia la laringe, se comprime entre las cuerdas vocales y el punto de la oclusión supraglótica (por ejemplo dental, labial, o velar); acto seguido, el punto de la oclusión supraglótica se abre dejando salir el aire laringeo...” (p. 83).

It appears that this definition corresponds to ejective stops found in many languages, including Yucatec Mayan, and represented in IPA as [p’ t’ k’]30. These ejectives occurred most frequently with [k’], followed by [p’] and [t’] (p. 86), and were more frequent in the lower class than in middle or upper classes (pp. 86-87). Aspirated [pʰ tʰ kʰ], on the other hand, was most frequent in [kʰ], followed by [tʰ] and [pʰ]; all were more common in lower-class and upper-class speakers than in the middle-class (pp. 88-89). Interestingly, the frequency ranking for ejective consonants (k’ > p’ > t’) matches the ranking Yager (1982) found for aspirated consonants (pp. 48-50). While not conclusive, this suggests that García Fajardo may have been correct in saying that these sounds are often confused by researchers31.

30 Note that García Fajardo (1984) does not conform to IPA in all instances.
31 In fact, Lope Blanch (1983/1987) notes that García Fajardo (1984) appears to have confused aspirated and glottalized consonants, along with [ʔ]. He defines her observations on these sounds as somewhat unreliable.
As for (ʔ), which for García Fajardo represents both a glottal stop [ʔ] and a preglottalized consonant\(^{32}\) (pp. 82-83), this data shows that (ʔ) occurs most frequently in lower classes, patterning with aspirated consonants for these speakers (pp. 85-86)\(^{33}\).

Lope Blanch (1987) is a collection of articles and speeches\(^{34}\) on Yucatan Spanish by the director of the *Atlás lingüístico de México* (ALM) (Lope Blanch 1990). His comments on the dialect range from his personal observations of regional lexical items to qualitative analysis of several linguistic variables. Lope Blanch (1987) discusses all of the phonetic variables studied in this dissertation, and his comments are summarized below.

Lope Blanch (1987) dedicates large parts of several chapters to the discussion of (-n) in Yucatan Spanish. Citing data collected for the ALM via linguistic questionnaires and recorded free conversation, he notes that [m] is produced with a frequency of 25% in the questionnaires, and only 12% during free conversation (1981/1987 p. 42). Since the questionnaires are essentially word-naming tasks in which every word is followed by a long pause, Lope Blanch (1981/1987) argues that [m] occurs most often in absolute final

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\(^{32}\) García Fajardo (1984) defines a preglottalized consonant as “…la secuencia conformada por un breve saltillo [ʔ] y un primer momento de glotalización en el sonido siguiente…” (p. 83). It is not clear that this subtle phonetic distinction between a glottal stop and a glottalized consonants will be important sociolinguistically, and in this study will be treated as one variant [ʔ].

\(^{33}\) In this data, preglottalized consonants showed different frequencies based on phoneme: [p] was preglottalized most often in lower-class speakers (p. 87), while [t] is most frequent among upper-class speakers (pp. 87-88), and [k] occurring most often among middle-class speakers (p. 88). It is not clear what this pattern suggests, other than that preglottalized consonants are common throughout all speakers, although the overall frequency is not high.

\(^{34}\) These articles were previously published, and the original will be cited here, referenced within the 1987 collection, e.g. Lope Blanch (1984/1987 p. 123) refers to p. 123 of the 1987 compilation which includes the 1984 article. Each article is referenced separately in the bibliography, with the original pages in the citation where available, and the page numbers from the 1987 compilation at the end.
position before a complete pause; brief pauses that occur in normal speech may not be
eough to ‘trigger’ [m] (p. 47). Regarding possible Mayan influence on the articulation of
(-n), Lope Blanch (1980/1987) concludes that the labialization of final nasals is
fundamentally a process internal to Spanish, given that it also occurs elsewhere in
Mexico, Argentina, and in a few locations in Spain (p. 61). He also notes, however, that
the frequency with which labialization occurs is much higher in Yucatan than elsewhere,
and that this phenomenon coincides with frequencies and patterns found in Yucatec
Maya, and therefore this process did not develop independently of Mayan influence (p.
62). He argues that it is a natural process that may have been favored by contact with
Mayan (p. 62). Likewise, it is likely that bilingual speakers in Yucatan included final [m]
in their speech, and this trait was later passed to monolingual speakers, given that Spanish
allows the neutralization of [n] and [m] word-internally (p. 63). Finally, the overall
variant nature of Yucatan Spanish and the absence of a strong norm have permitted the
change within the dialect (p. 63).

For the voiced stops (b d g), Lope Blanch (1983/1987) reports a wide range of
variation, citing cases of tense stops, weak obstruction, fricatives and deletion of these
consonants (pp. 78-79). Overall, he found that on average [b] occurred with a frequency
of 50%, [d] at 40%, and [g] in 30% of cases, although these numbers hide a large amount
of individual variation (p. 79). He notes that this high level of occlusion, while not as
high as previous studies would suggest, is unusual in the phonological system of Spanish
(p. 80).

Regarding the voiceless stops (p t k), Lope Blanch (1983/1987) found aspirated
[pʰ] in 9 of 13 subjects with varying rates of frequency, [tʰ] in 5 subjects with less
frequency than for \([p^h]\), and \([k^h]\) was noted in all 13 informants, although again the individual frequencies varied greatly (pp. 83-84). These results echo those of Yager (1982). He also notes the sporadic glottalization (i.e. ejective consonant) of \([k']\), a pronunciation that occurs less with \([t']\) and not at all for \([p']\) (p. 86). While he does not directly address the role of Mayan influence on aspirated (p t k), he does state that overall the Yucatan Spanish realizations of these variables do not differ greatly from the Castilian norm (p. 88).

Finally, Lope Blanch (1987) dedicates two chapters to glottalizations in Yucatan Spanish. As previously mentioned, he notes the importance of not confusing glottalized (ejective) consonants, aspirated stops, and \([?]\) insertion (1983/1987 p. 100). As in previous studies, true ejective consonants are attested only rarely (1983/1987 p. 103). The maintenance of hiatus via \([?]\) insertion, however occurred “...con notable regularidad en el habla española de buen número de yucatecos...” (1983/1987 p. 106), in a variety of phonetic contexts.

Cases of \([?]\) occurred most often between two vowels of different quality, e.g. ‘sí hablo’ [sí?áblo] (1984/1987 p. 115); a final atonic vowel and a following stressed vowel, e.g. ‘doce años’ [dó.se.?á.nos], ‘me iba’ [me.?i.ba] (1984/1987 p. 115); two atonic vowels, e.g. ‘cuando entraron’ [kwan.do?en.trá.ron], ‘habla el hombre’ [á.bla.?el] (1984/1987 p. 116); between two stressed vowels, e.g. ‘compré eso’ [kom.pre.?e.so]; and between an atonic and a stressed vowel, e.g. ‘mi hija’ [mi.?i.ha], ‘que ellos’ [ke.?e.yos] (1984/1987 pp. 116-117). Cases of \([?]\) were also found in contexts where hiatus was not a
factor, for example ‘yo cuento’ [jó?kwénto], ‘la ves’ [la?bés], although these occur less frequently than in intervocalic contexts (1984/1987 p. 123).

Yager (1989) addresses the variable (-n) in Yucatan Spanish. His data consisted of recorded free conversations with 25 speakers, balanced for gender, age, and socioeconomic class (p. 88). The results show that [m] occurred 41% of the time, a frequency equal to that of [n] (p. 90). This frequency is much higher than that reported for Lope Blanch (1987), who recorded a rate of 12% in conversation data (p. 42), a difference which Yager attributes to methodological differences in the way in which final nasals were counted. The data also demonstrate that [m] occurs more often in women (50% vs. 32% for men) and among the younger generations (55% for the youngest, 40% for the middle generation, and 34% for the oldest speakers) (p. 91). Additionally, although the differences are not great, he found more cases of [m] among middle-class speakers (47%), followed by lower-class (41%) and upper-class speakers (35%) (p. 93).

Yager (1989) ran one test of statistical significance, and determined that knowledge of Mayan does not correlate significantly with production of final –m. Statistical significances are not provided for the other social variables. Yager (1989) explains the data based on notions of prestige, concluding that –m began in women speakers, and appears to have spread to lower class men. Importantly, the labial pronunciation is accepted by the upper class speakers, suggesting that use of final –m may continue to spread in the future (p. 94).

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35. The youngest speakers in Yager (1989) correspond to the middle age group in the present study.
36. Note that this conclusion is not predicted by the hypotheses for this study. The data analysis in Chapter 5 shows that, for speakers in the present study, there is a statistical correlation between the production of [m] and knowledge of Mayan. This is addressed further in Chapters 5 and 6.
Pfeiler (1992) also presents data on (-n) in the Yucatan, using recorded conversation data from 32 subjects balanced for age and gender. The subjects were residents in three distinct areas of the city of Mérida: two colonias or neighborhoods in the south of the city, home to immigrants from the center of Yucatan, one colonia in the north of the city that has only recently become part of Mérida, and one established colonia in the center of the city inhabited primarily by long-term residents of Mérida (p. 112). While Pfeiler does not present frequencies for each nasal variant, she does distinguish several types of pauses that may or may not ‘trigger’ [m]. Her findings show that an absolute or explanatory pause (to provide more information) both condition [m] (p. 119). A “pausa potencial (depende de la voluntad del hablante)” (p. 119) conditions [n], and an enumerative pause (preceeding a list) may produce either [m] or [n] (p. 119). With regards to social variables, women tended to produce more [m], while no difference was found for social class, based on years of schooling (p. 119).

Solomon (1999) presents a variationist study of two variables in Yucatan Spanish. One of these variables is phonetic, the palatal (y), and the other syntactic/pragmatic (overt subject expression). While this study does represent a complete, quantitative variationist study of two aspects of Yucatan Spanish, none of the phonetic variables studied in this dissertation figure as part of that analysis. Still, Solomon (1999) represents a positive step towards quantitative linguistic analysis of the dialect.

Finally, Michnowicz (in press) undertook a Rapid and Anonymous survey of final nasal variants in the name Avenida Colón, a major street in the city of Mérida. Following the methodology of Labov (1966), Michnowicz asked people walking along Avenida Colón what the name of the street was. He then asked them to repeat their answer, taking
the first utterance to be normal speech and the second to be careful speech. The subject pool was balanced for gender (25 men and 25 women).

The results showed that for all speakers and contexts, [m] was the preferred variant (74%). This result is much higher than that reported in any previous study, and suggests that the use of [m] may to some extent be lexicalized, and it is doubtful that another word chosen at random would have produced such high frequencies. Multivariate (VARBRUL) analysis showed that men produced more [m] (0.632) than women (0.368), and that it was conditioned by normal speech (0.527) rather than emphatic speech (0.473). The difference between genders for emphatic speech was significant. These results conflict with earlier studies, which show that women produce more [m] than men, and are likely due to the methodology\textsuperscript{37}. When approaching strangers at random on the street, men may be more relaxed when speaking to other men.

This chapter has demonstrated how the literature on Yucatan Spanish has followed trends in the field of dialectology\textsuperscript{38}. Early studies were impressionistic in nature, and did not provide replicable methodologies. In the 1960’s, with the onset of variationist methods pioneered by Labov (Labov 1963, 1966), research moved away from purely descriptive studies, and began focusing on systematic recordings of speakers of both genders, and all socioeconomic classes and ages. While the total corpus of research on Yucatan Spanish provides a solid point of departure, there are several gaps in the

\textsuperscript{37} This is especially true given that the results of this dissertation confirm earlier studies for [m]: women produce more [m] than men. See Chapter 4 for results.

\textsuperscript{38} Milroy & Gordon (2003) outline the characteristics of traditional dialectal studies, such as the emphasis on NORMS (non-mobile older rural males). Early studies in Yucatan Spanish were concerned primarily with lower class, uneducated speech. Later studies show the influence of the variationist paradigm, with its emphasis on quantitative analysis of speech communities, including urban areas.
literature. Primarily, while several of the studies have employed some variationist methods and reported frequencies for different sociolinguistic divisions, none of them constitute a quantitative study per se of Yucatan Spanish. Without the analysis of correlations between all of the factors, linguistic and extralinguistic, involved, the picture of Yucatan Spanish is incomplete. Also, while all of the studies on Yucatan Spanish mention the influence of Mayan on the dialect, only one (Yager 1989) addressed this question empirically. This dissertation will do so through a multivariate analysis to determine possible correlations between use of typical Yucatan Spanish variables and Spanish-Mayan bilingualism. The next chapter consists of a review of variationist theory and methods that will serve to frame the rest of the dissertation which details the present study.
Chapter 3

Variationist sociolinguistics

3.0 The variationist paradigm

As we have seen, a majority of the previous studies on Yucatan Spanish followed a primarily descriptive or qualitative methodology. While these studies have successfully described the overall structure of the dialect, they have failed to provide a deeper explanation of the patterns of Yucatan Spanish, as well as any changes that may be taking place. Specifically earlier studies, in keeping with the methodologies prevalent when they were carried out, tended to overgeneralize the use of non-standard phonetic variants, adopting either the point of view of ‘así se habla’ that is how they speak or that of describing phonetic alternations as ‘free’ variation. Thus the study of Yucatan Spanish can benefit from the application of a more nuanced model, capable of capturing the subtle variations in choice of variant and the ways in which these sounds serve as sociological markers for speakers of the dialect. The variationist sociolinguistic paradigm is one such model.

From a theoretic standpoint, variationist theory assumes that variation is inherent in human language, serves a social function, and is worthy of study (cf. Labov 1994, Milroy & Gordon 2003 and Chambers 2003). This outlook is in opposition to those theories that adopt the axiom of categoricity, the idea that linguistic units are qualitative and discreet, without variation (Chambers 2003, p. 26). For example, a phoneme is an
abstract unit that possesses the traits of either X or Y, but cannot vary between the two. This mode of thought has dominated linguistic theory throughout the last century, and can be seen in distinctions such as Saussure’s *langue* vs. *parole* and Chomsky’s *competence* vs. *performance*. Traditionally, for linguists working within the structuralist or generative frameworks, the focus of a science of language should and must be only the abstract system underlying actual language use. Thus generative linguistics stresses the study of *competence* (*langue*). For these fields, actual language use by speakers within a community (i.e. *performance* or *parole*) is not the focus of linguistics. Chomsky provides a clear definition of who should be the subject of linguistic study (Chomsky 1965, 3).

> “Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance.”

While there is no doubt that this method of linguistic inquiry has been extremely fruitful over the last four decades, linguistics based solely on the *axiom of categoricity* ignores a fundamental aspect of human language. Simply put, the ideal speaker who has traditionally been the focus of generative linguistics does not exist in the real world of speaker differences, social distinctions, linguistic prestige, variation and change over time, and importantly, a completely *heterogeneous* speech-community (see Labov 1966, Chambers 2003, and Milroy & Gordon 2003 for further discussion). Variationist sociolinguistics addresses many of these shortcomings.
3.1 A science of parole

As hinted previously, the variationist framework differs in important ways from other theories of language that stress competence over performance and that assume an unchanging, non-varying idealized form of language. While generative linguistics and other similar frameworks constitute a study of what Saussure referred to as langue, i.e. the abstract mental representations of language structure, variationist sociolinguistics studies parole, the actual use of language by speakers in a social context. For traditional langue-centered theories, the scientific study of parole is a contradiction in terms (c.f. Chambers 2003 pp. 26-38). Saussure stated (Saussure 1916 19-20):

“One might if really necessary apply the term linguistics to each of the two disciplines [i.e. study of langue and parole], and speak of a linguistics of speaking, but that science must not be confused with linguistics proper, whose sole object is language”.

For early structuralist and generative linguists, there were simply too many uncontrollable factors to consider when studying speech. The only way to understand the linguistic system was to study the system isolated from its every day use (Chambers 2003, p. 27).

Variationists, however, study language as it is used by speakers in real world conditions. Technological innovations during the last half of the 20th century made it possible to classify and study language in its social context. That is, improvements in portable recording devices, tools for linguistic analysis, and ever faster and more powerful computers have allowed linguists to conduct fieldwork, quantitatively analyze linguistic tokens, and understand statistically significant patterns in the stratification of linguistic variables. Real-language data collected during fieldwork forms the basis of
much variationist work. Likewise, it was no longer necessary to study language categorically, relying only on binary division. Rather, each variable could be studied as a spectrum of variants, each understood within its linguistic and social context. For example, each of the possible articulations of a phoneme forms part of a *linguistic variable*, an important construct in variationist studies.

### 3.2 The linguistic variable

A linguistic variable is a unit for which multiple realizations are possible, i.e. more than one way to say the same thing (Silva-Corvalán 2001 p. 86). These different realizations are not structural in nature, but rather reflect the inherent variability present in all human language. A very well-known example of a linguistic variable is the New York City *(r)*\(^{39}\) studied by Labov (1966) in his seminal work on that dialect. In New York, *(r)* may be pronounced as *[r]* or *[Ø]* (p. 33), depending on linguistic factors such as phonetic context and speech mode (normal or emphatic) as well as the social factor class as determined by subjects’ employment at one of three NYC department stores. Labov found that the realization of *(r)* was not due to free variation, but rather was conditioned by social and linguistic factors, a conclusion that would have been difficult to determine based on earlier descriptive methodologies. Speakers were more likely to produce *[r]* in final position (floor), a linguistic context, and if they were employed at a ‘higher-class’

\(^{39}\) As mentioned previously, this dissertation will follow the standard variationist practice of indicating linguistic variables between parentheses ( ) to distinguish the variable from phonemes, shown between bars // and allophones presented between brackets [ ].
store, a social context (p. 50). Therefore it is clear that the variable (r) serves as a marker of social class for NYC speakers. While Labov (1966) and many other studies, including the present dissertation, focus on phonetic variables, other variable types are also possible (cf. Paolillo 2002 pp. 24-27 for examples of phonetic, morphological and syntactic variables). The present study examines the following phonetic variables in Yucatan Spanish:

- (-n) ‘final nasal’ which may be realized as [n], [m], [ŋ] or [Ø].
- (b d g) ‘voiced stops’ which may surface as the stops [b d g] or fricative [β ð ϐ].
- (p t k) ‘voiceless stops’ which may arise as either aspirated [pʰ tʰ kʰ] or unaspirated [p t k]40.
- (ʔ) ‘glottal stop/hiatus’ where hiatus may be maintained in contexts (‘mi hijo’ [miʔi xo]) in which ‘standard’ Spanish prefers elision (‘mi hijo’ [mi xo])41.

3.3 Quantitative analysis

As mentioned previously, variationist sociolinguistics is in many ways a refinement of earlier descriptive work in dialectology and language geography (cf. Milroy & Gordon (2003) Ch. 1 and Silva-Corvalán (2001) Ch. 1 for more on this

40 Implemented in this study as a pilot study of [kʰ].
41 Likewise examined as a pilot study (cf. Chapter 5).
relationship). One of the important distinctions between the two related fields is that the variationist framework examines variable language use quantitatively, whereas earlier studies provided qualitative descriptions. Quantitative data is collected and analyzed through a variety of methodologies developed by variationists over the last 40 years.

Quantitative analysis consists of three primary phases (Silva-Corvalán 2001). First, each token of a given variable is extracted from the data and coded according to its linguistic and social contexts (p. 71). Importantly, all applications of a given variable must be included in the analysis. For example, in Yucatan Spanish the variant [m] is the most interesting of the possible pronunciations of the variable (-n), given that [m] is the variant most associated with this dialect. In order to conduct a sound quantitative analysis, however, all tokens of (-n) must be counted and analyzed, and each instance of (-n) is coded according to its pronunciation (i.e. [n m η Ø]). This is known as the principle of accountability, which states that investigators must not only select tokens which confirm their hypotheses, but rather must include all applications and non-applications of a given variable in their analysis (Milroy & Gordon 2003, p. 137, cf. Labov 1982).

Once data has been extracted and coded, the next step is the quantification and statistical analysis of the data (Silva-Corvalán 2001). This process involves the use of statistical computer software designed to handle large amounts of data and to determine significant correlations between linguistic and social factors (p. 75). The use of multivariate analysis software, known as VARBRUL (variable rules analysis), is
common in variationist studies, and is the statistical analysis used in this dissertation (see Paolillo 2002 for an in-depth discussion of how multivariate analysis works). Finally, the results of the multivariate analysis must be interpreted (Silva-Corvalán 2001 p. 76). The interpretation involves discovering patterns in the correlations between linguistic and social variables, and must involve care on the part of the researcher to tease apart complex interactions among variables that can skew the statistical analysis (Paolillo 2002, pp. 65-69). The researcher may then propose linguistic or social explanations for the patterns revealed by VARBRUL runs and frequency analysis.

The previous discussion examined the basic tenets of variationist study. The next section demonstrates that the variationist paradigm has been successfully implemented in the study of Spanish-speaking countries with the goal of demonstrating the appropriateness of this model for analyzing language use in the Yucatan. Following is a brief review of social factors (gender, age, and social class) in the variationist literature.

### 3.4 Cross-cultural applications of variationist methodology

A majority of the early studies in variationist sociolinguistics were on variation in English-speaking countries (e.g. Labov (1966): NYC; Wolfram (1969): Detroit; Milroy & Milroy (1978): Belfast). A substantial number of studies of Spanish-speaking countries, however, have shown that variationist principles and methodologies are transferable to

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42 See Chapter 4 Methodology for details on the coding and analysis of data from the present study.
43 The interpretation of results for this dissertation is found in Chapter 5 Results and Chapter 6 Conclusions.
44 See Milroy & Gordon (2003) for a discussion of early sociolinguistic studies.
other societies, cultures, and languages. Phonetic variation in Spanish, in particular, has received a great amount of attention in the literature. Variables studied include realizations of (s) liquid consonants (r) and (l), pronunciation of (ch), and the merger of /y/ and /ʎ/ (for example Cedergren (1973) in Panama City, Fontanella de Weinberg (1987) in Buenos Aires, Terrell (1981) for Buenos Aires, Panama City, Havana, San Juan, Mérida, and Caracas, and Solomon (1999) for (y) in Yucatan), among others (see Silva-Corvalán (2001) for a bibliography of variationist studies in Spanish). As mentioned in Chapter 2, Solomon (1999) has successfully applied the variationist paradigm to two variables in Yucatan Spanish.

The results of these studies have demonstrated that the same basic principles of variation and change apply to Spanish as well as English-speaking cultures. The next section examines the importance of social variables in language variation and change, citing examples of variationist studies from different cultures around the world.

3.5 Social variables

Variationist sociolinguistics seeks to discover correlations between linguistic and social variables, with the goal of explaining patterns in language variation and determining important factors in language change. Throughout 40 years of variationist studies, social factors such as age, gender, occupation, education, income, social class, social networks, and linguistic identity have consistently been shown to correlate with language variation. Establishing these correlations is one of the primary goals of variationist sociolinguistics (Chambers 2003 p. 18), and is also the goal of this
dissertation with regards to Yucatan Spanish. The following sections review the role of age, gender and class as established by previous variationist studies.

3.5.1 Age as a social variable

Throughout a person’s life, physical and mental changes are accompanied by changes in language use, making it fairly easy to identify someone’s age based on a relatively short sample of speech (Chambers 2003 p. 166). From the perspective of research in language variation, age is revealing in two primary ways. First, some linguistic attributes are associated with older or younger speakers in a particular community. Young speakers, generation after generation, produce variant X, while older speakers produce variant Y. Thus as the younger generation ages, those speakers will shift from $X > Y$. This situation is one of *age grading*, and allows for the clear identification of linguistic and social variables. This shift in variant preference represents regular changes that linguistically mark a speaker’s transition from one phase of life to another (Chambers 2003 p. 206). An example of this situation is found in the use of the American pronunciation of the letter $\langle z \rangle$ (‘zee’) among children in Ontario, Canada. Due in large part to the influence of American children’s television programming, young speakers use the American pronunciation. As they age, however, speakers shift to the Canadian pronunciation, ‘zed’ (Chambers 2003 pp. 207-208). Age grading is not particularly interesting from a variationist point of view, since it represents a stable, predictable variable that serves only to mark generational differences within a particular community. Research has also shown that age grading is not common (Chambers 2003 p.
206, Milroy & Gordon 2003 p. 36), and that age differences in language use more often represent something far more interesting: language change in progress.

The ability to observe language change in progress is one of the most important contributions of variationist studies, and represents a fundamental shift from earlier theories that maintained that language change was regular and unobservable. Bloomfield (1933), for example, argued that language change was a slow, regular process, too slow in fact to be observed as it happens (Labov 1994 p. 44). The assumption was that only the end result of change could be observed. This assumption is reflected in much of the literature in historical linguistics. Change has traditionally been represented as a series of stages, as in the following example from Penny (2000, p. 3): “Latin LATUS > Hispano-Romance [ládo] > medieval Spanish [láðo] > modern Spanish [lás-o] or [láo]”. This view of language change as a chain is predicated on the evidence for historical change, the majority of which is textual. What this model ignores, however, are the non-categorical intermediary stages during which competing variants vied for primacy in the language (Penny 2000, pp. 3-4). Current research has shown that language change is anything but categorical, and that it can happen quite rapidly, often within a few generations (Labov 1994, p. 44). There are two primary ways in which language change in progress can be observed. One of these, change in real time, examines data from the same speech community at two different points in time. The two data sets can then be compared to determine what, if anything, has changed. A second, more common method involves observing language differences over apparent time, comparing data from subsequent generations at the same point in time. Differences in speech between older and younger
speakers may represent a change in progress, although care is needed to avoid confusion with possible age grading effects. What follows is a brief examination of each of these methodologies for observing language change in progress.

Observations in real time, while difficult to undertake, often provide reliable proof of change in progress. There are two primary ways to make observations in real time. The first of these is to return to a speech community after a period of years and conduct the same experiments. One example of this is Fowler’s (1986) replication of Labov’s (1966) NYC department store survey (cited in Labov 1994 pp. 86-94). Fowler recreated Labov’s experiment to determine what change in the production of (r), if any, had occurred during the 20 year interval between the studies. While the overall pattern of (r) distribution in NYC remained constant, each of the department stores demonstrated a higher rate of (r) than in 1966, showing that change had taken place (Labov 1994 p. 90). Likewise, Cedergren’s (1984) replication of her earlier study (Cedergren 1973) of Spanish (ch) lenition in Panama City shows similar results. In order to compare the data from her original study, Cedergren returned to Panama after a 10 year interval (cited in Labov 1994 pp. 94-97). Like the replica of the NYC department store survey, Panama Spanish showed the same overall patterns in the two studies; the rate of (ch) lenition was 10-15% higher in the later study (Labov 1994, p. 96). These both represent change in progress observed in real time. It is clear that data collection of this type requires a long-term commitment, either on the part of the same researcher or of the field to a particular

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45 These studies can consist of trend studies, in which the same community is studied, or panel studies, which involve data collection from the same speakers after a period of time (Labov 1994 pp. 76-77).
variable. Another common way to make observations in real time is to compare an earlier linguistic study of a variable to current data.

Labov (1963) made use of the Linguistic Atlas of New England (Kurath et al. 1941, cited in Labov 1994, p. 75) to help determine a possible change in progress on Martha’s Vineyard. Labov’s data, which showed increased centralization of the diphthong /aw/ in younger speakers, could have been interpretable as a case of age grading. Comparison with previous data, however, confirmed that /aw/ centralization was not present during the previous generation (Labov 1994, p. 75). Thus real time data obtained from a previous study allowed for the interpretation of the Martha’s Vineyard data; the increased centralization of /aw/ represented a change in progress (Labov 1963). An additional example can be found in this dissertation, which compares data from previous studies on Yucatan Spanish to the present data to help determine what, if any, changes are taking place46.

A second, more common method for observing linguistic change in progress is through the comparison of simultaneously collected data representing different age groups. This procedure is predicated on the apparent time hypothesis, which states that speakers of different ages represent language use at different times (Milroy & Gordon 2003 p. 35). Important to this assumption is the idea that speakers conserve some linguistic traits over their lifetimes, and in this way a 50 year old speaker is indicative of the norms of speech 40-50 years ago. Thus if a difference is observed between 50 year old speakers and 20 year old speakers, that difference may represent a change that has

46 See Chapter 5 Results and Chapter 6 Conclusions for more on observed changes in real time.
occurred over the intervening 30 years. One must be careful, however, in interpreting apparent time results. Comparisons should be made between apparent time and real time observations in order to rule out the possibility of age grading. As noted above, Labov (1963) made effective use of both real and apparent time data to confirm a case of change in progress. Importantly, the apparent time hypothesis has been tested directly by means of comparing predictions made from apparent time data to the actual situation found later in real time. An example of this is again Cedergren’s (1988) return to Panama City. In the original (1973) study, apparent time observations predicted the increased lenition of (ch) that was later found in a real time replication (1988); the predicted change in progress was confirmed (Cited in Chambers (2003) pp. 223-225). This dissertation makes use of both apparent time data collected for this study and real time data from earlier sources to determine possible linguistic changes in progress.

3.5.2 Gender as a social variable

Like age, gender is a social variable that demonstrates strong correlations with linguistic variables. Labov (2001) states “gender is a powerful differentiating factor in almost every case of stable social stratification and change in progress that has been studied” (p. 262). While some of the language differences between men and women have a biological source (i.e. vocal pitch, see Chambers 2003 pp. 120-121), the vast majority are socially based and linked to gender roles within society. The effects of the overt or covert prestige of a given linguistic variant, as well as whether a variant marks a case of
linguistic change from above or change from below are all deciding factors in the role of gender in language variation.

It has been widely observed that women are often more attuned to prescriptive linguistic norms than are men, and therefore produce more ‘prestigious’ variants than do men. Labov (2001, p. 274) summarizes this trend with the following principle: “In linguistic change from above, women adopt prestige forms at a higher rate than men”. Linguistic change from above refers to language variation that is initiated consciously within a speech community, often imitating a more prestigious variety or language (Labov 1994, 78). These language forms are imbued with overt prestige, recognized within the community as belonging to upper, better educated, more successful classes (Labov 1994). In these types of changes, women appear to be leaders in the community in the early adoption of change. For example, women show more use of /r/ in the speech of New York City, a change instigated based on a national r-pronouncing norm (Labov 1966). Likewise, women lead the way in abandoning traditional dialect forms in the Spanish town of Ucieda, showing more cases of Standard Spanish final [o] than men, who more frequently retain the dialectal final [u] (Holmquist 1987, cited in Labov 2001). For socially prestigious changes, women produce more changed forms than men do. It is hypothesized that women are more aware of changes from above due to the discrepancy in political, economic, and social capital between men and women (Trudgill (1972) cited in Chambers (2003) p. 144-145). Trudgill (1972) summarizes this hypothesis:

“The social position of women in our society is less secure than that of men, and, usually, subordinate to that of men. It may be, therefore, that it
is more necessary for women to secure and signal their social status linguistically and in other ways, and they may for this reason be more aware of the importance of this type of signal [i.e. standard language adopted from above]"47

Interestingly in situations of change from below, women also outpace men in their use of innovative forms. Unlike change from above, which is an overt adoption of more prestigious language, change from below begins without conscious awareness on the part of speakers, usually via internal, mechanical linguistic processes (Labov, 1994, 78). For example, women are leaders in the Northern Cities Shift vowel changes (Fasold 1969), as well as in the lention of (ch) in the Spanish of Panama City (Cedergren 1973) and the devoicing of [z] in Buenos Aires (Wolf & Jiménez 1979). This and other data leads to the following principle: “In linguistic changes from below, women use higher frequencies of innovative forms than men do” (Labov, 2001, 292). While men are often reported as being more aware of covert prestige (cf. Trudgill 1983 cited in Chambers 2003), which assigns value to ‘non-standard’ linguistic variants, women tend to innovate more, an act which also pushes them further from overt language norms. The pattern of female leadership in changes from above and changes from below is articulated led Labov (1994) as the gender paradox: “Women conform more closely than men to sociolinguistic norms that are overtly prescribed, but conform less than men when they are not” (p. 293). In other words, women tend to speak a more standard variety, while at the same time innovating against that same standard. It is important to remember, however, that these differences are cultural in nature and are not caused by physiological

47 This explanation for gender differences in language is not without controversy, and has been criticized by feminist scholars. Importantly, it is the explanation, not the observed data, which is in question. See Chambers (2003, pp. 145-147).
differences between men and women. Rather, the majority of gender differences in language use are an artifact of social discrepancies in mobility, access to positions of power, and other external factors (Chambers 2003). Since men and women have varying social roles in different cultures, one would predict gender-influenced language use to differ as well. For example, there is some evidence that linguistic gender roles are in large part reversed in Arabic-speaking cultures due to differing access to standardized Classical Arabic, the prestige variety (Chambers 2003, pp. 156-159). Importantly, however, differentiated language use along gender lines is likely universal, even if the exact orientation of each gender may vary cross-culturally. The gender roles outlined above appear to hold for western societies, including the Spanish-speaking world, as shown by studies in Spain (Navas Sánchez-Élez 1997) and Panama (Cedergren 1973), among others. The present dissertation also presents further evidence for the role of gender in Spanish language variation.

The question remains of how such strong gender differences arise in situations of language change. Labov (2001) presents a seven-stage model to demonstrate how gender differences might arise, as well as how women transmit change throughout the community. First, children acquire their language from their mothers or other female caregivers. In this way women have a much greater influence than men on transmitting language to subsequent generations. At this stage the language system is stable. Later, change must be initiated at some point after language acquisition, probably in early adolescence. These innovative speakers will form the input for the next generation. The

\[48\text{ See Chapter 5 Results and Chapter 6 Conclusions for the role of gender in language variation in Yucatan.}\]
next stage sees the changed variable related to some social variant, and its use is increased among the group with which the sound is identified (pp. 307-308). Importantly, if a particular change is not associated with any social variable, the change will not be spread among speakers and will have little impact on the linguistic system as a whole (p. 462). Assuming that the change in question has been related to a social group, the next step involves gender differentiation. Men will now begin to shun what they view as female speech, widening the gender gap (p. 308). This is reflected in the fact that men are generally one generation behind women in use of a changing linguistic variable (p. 306). Labov argues that changes that have been associated with men are doomed to failure in the wider community, given the role of women in passing language on to their children (p. 462). Finally, the change continues to expand through the speech community, with men lagging behind women for several generations. Eventually, as the change is almost complete, gender differences lessen. If the change is accepted throughout the community, differences related to gender will finally disappear (pp. 308-309).

As this discussion has demonstrated, gender is a crucial variable in studying and explaining language change and variation. Men and women speak differently and are attuned to different notions of linguistic prestige due to social factors. Women are also instrumental in transmitting an innovative form to the next generation of speakers, a factor which may be important for language change and dialect development in the Yucatan.
3.5.3 Social class as a variable

Unlike age and gender, which are clear, binary distinctions (a speaker is biologically either male or female and either 25 years old or not), social class is much more difficult to define. Depending on the culture, a person may be destined to remain in a particular social class throughout her life, or alternatively she may have the opportunity to improve her social class through education, employment, or other means. Importantly, unlike age and gender, the notion of class represents a continuum determined by multiple factors (Chambers 2003, p. 43). While it is often easy to identify members of the extreme social classes (extreme lower class vs. extreme upper class), defining criteria for membership in the middle categories is more difficult. For example, what criteria separate the upper end of the lower class and the lower end of the middle class? The answer will likely vary based on societal factors particular to a given environment, as well as on individual factors such as education and family background. Yet it is important that variationists have sound ways of determining class divisions, since language variation often serves to demarcate social distinctions among speakers (cf. Milroy & Gordon (2003), pp. 40-48 and Chambers (2003), pp. 54-59). Determining social class divisions for a group of speakers, often in a society of which the researcher is not a native member, is problematic. In order to better understand the role of social class in language variation, variationist researchers have developed methods of assigning social class that address many of the difficulties inherent to the notion of class in western industrialized societies.
Early studies in variationist sociolinguistics located speakers along the social class continuum by means of a *socioeconomic index*. These indices take into account the multiple factors that determine a particular speaker’s class within their society. These factors may include education, occupation, income, housing type, condition and maintenance of the dwelling, and parents’ occupation, among others (Chambers 2003, pp. 47-51, Labov 1966, pp. 137-144). For example, Labov (1966) divided speakers into ten different social classes based on the factors of occupation, education, and income. Each of these factors was subdivided and weighted to reflect its overall importance to determining social rank for a particular speaker.

While ten distinct social classes may be required to capture the fine grained distinctions in a multicultural megalopolis like New York City, most urban areas do not demonstrate such a range of classes with linguistic consequences. Labov (1966, p. 138) notes that alternatively one factor could have been chosen as the marker of social class, given that the three notions of occupation, education, and income are closely related. Chambers (2003, p. 42) argues that the fundamental class distinction in western societies is that of blue collar vs. white collar workers. Blue collar workers generally possess less education, earn less money, are employed in manual jobs, and are supervised by white collar workers. White collar workers are distinguished from blue collar not only by the types of jobs they perform and the education they have, but also by they way they dress and the social activities they prefer (Chambers 2003, p. 42). Blue collar workers are
overwhelmingly lower class, while white collar workers make up the middle class\textsuperscript{49}, a fact that allows sociolinguists to determine social class based solely on the occupation of a speaker. Importantly, more complex social indices may not be appropriate for more stratified societies, like those in Latin America, as they force the researcher to apply gradience to society that does not reflect the real situation (Milroy & Gordon 2003, p. 41).

As we have seen, occupation is tightly intertwined with other indicators of social class, such as education and income. For that reason, dividing speakers into different social classes based on occupation alone reflects the same divisions captured by more complex social indices (Chambers 2003, pp. 52-54). This fact, combined with a decrease in large-scale surveys has led Labov (1990, cited in Milroy & Gordon 2003, p. 47) to judge that occupation is sufficient, and this method of speaker sampling is currently prevalent in variationist studies. As will be demonstrated in Chapter 4, occupation was the primary factor in determining social class in this dissertation, although family background and education were also taken into account.

As argued in previous sections, age and gender are both important extra-linguistic factors in determining the rate and direction of language change. In the case of social class, however, language differences serve to mark the boundaries between classes and function as shibboleths designed to keep the status quo in place (Chambers 2003, pp. 54-55). Macaulay (1976 cited in Chambers 2003, p. 54) argues that the correlation between

\textsuperscript{49} Chambers (2003, p. 42) argues that the upper-class consists of people with long-term, inherited privileges and wealth, a situation that is difficult to find outside of old world hierarchical societies. These speakers are so few as to be inconsequential linguistically in most western societies. Instead, we find a large range of occupations and incomes in the middle-class. Alternatively, the middle class may be difficult to define, especially for more stratified societies, like those found in Latin America.
social class and speech is so strong that sociologists should consider using linguistic variants to determine class, rather than the other way around. An important factor in the correlation of social class with linguistic variants is the notion of social mobility.

Socially mobile speakers, those that are in the process of moving to a higher class group, often attempt to sound more ‘upper-class’, leaving their former ways of speaking behind (cf. Chambers 2003, p. 55). This can result in the hypercorrection of marked language variants on the part of the socially mobile speakers. In attempting to sound more ‘upper-class’, they in fact often distinguish themselves from the group they are trying to imitate. Inevitably, however, these speakers will carry with them some of their ‘lower-class’ linguistic variants. If the possibility of social mobility grows, some of these formerly shunned forms may gain wider acceptance within the community, as they come to be associated with the newly successful group (see Chambers 2003, p. 61). Importantly, then, the social stigma attached to a particular linguistic variant may change as the societal demographics change (Silva-Corvalán 2001, p. 107). It will be argued later that this may be an important factor affecting language change in Yucatan Spanish.

Socioeconomic class can also serve to halt the spread of linguistic changes that may be underway (Labov 2001). A multivariate analysis of Philadelphia English speakers’ vowels shows a strong correlation for class for partially completed changes. Incipient and nearly completed changes lie below the level of consciousness, and as such are not subject to external pressures. Analysis of mid-range and new and vigorous changes, however, shows that social class is an important factor in determining the rate of change for a particular speaker (pp. 186-187). It is during these two stages that a particular change may be stigmatized based on its perceived connection to a particular
social group. For example, Labov argues that middle class speakers, desiring to
distinguish themselves from the working classes, are beginning to resist the fronting and
raising of (aw), thereby restricting its advance (p. 187). Thus depending on the particular
social situation within a given community, the identification of linguistic variables with
social class may serve to spread the variant throughout the community or alternatively to
stop or slow a spread that may be underway.

3.6 Conclusions

This chapter presented a review of the variationist paradigm, focusing on the role
of age, gender, and social class in explaining language variation and change. Examples
were cited of the application of variationist methods to Spanish-speaking environments,
including the Yucatan, demonstrating that this paradigm can help shed further light on
cases of dialectal variation like that in Yucatan Spanish. The next chapter details the
methodology for this dissertation, showing how the principles presented here are applied
to phonetic variables in Yucatan Spanish.
Chapter 4
Methodology

4.0 Introduction to the methodology

This chapter details the data collection and analysis procedures for the present sociolinguistic study of Yucatan Spanish. First, the sociolinguistic interview and how this technique was implemented for this research are outlined. Next is a description of the participants in the study, 40 native speakers of Yucatan Spanish. Following is an overview of the materials used in the study, including the corpus of recorded speech, the background questionnaire, and the language attitude questionnaire given to 10 of the participants. Finally, the method for analyzing the data through variable rules analysis (VARBRUL) is explained.

4.1 The Sociolinguistic Interview

The data for this study consist of recorded spontaneous conversations with native speakers of Yucatan Spanish. Fieldwork took place in the Yucatan during March 2004 and January-February 2005. Recordings were made by the author one-on-one with the speaker, although on occasion a Mexican friend, family member, or colleague was present as well. Following standard ethical data collection practices, all of the recordings
were made with the full knowledge and consent of the speaker\textsuperscript{50}. One potential problem with linguistic studies of this type is the observer’s paradox: the researcher is trying to observe how people speak when they are not being observed (Milroy & Gordon 2003, p. 49). Given that most speakers are not accustomed to being recorded, any sample of recorded speech is likely to not be indicative of the speaker’s vernacular, defined as the speech style employed in casual conversation (Poplack 1993, p. 252). Instead, recorded speech represents a more formal level of speech than that of conversation with friends, but more relaxed than many styles of formulaic speech (public address, interviews, etc.) (Labov 1966, p. 61). The sociolinguistic interview techniques employed by variationists were designed to reduce as much as possible the observer’s paradox (Milroy & Gordon 2003, p. 49). One way in which the observer’s paradox is mitigated is through the use of questions or conversation topics designed to distract the subject from the fact that they are being recorded and studied. Labov (1966, pp. 71-73) first used the “danger of death” line of questioning, in which subjects were asked to describe a time in which they felt that their life was in danger. The goal again was to distract the speaker from the nature of the interview taking place and thereby obtain a sample of their everyday speech. Other topics employed by sociolinguists include love stories (Adams 2002), ghost stories, and childhood activities (Milroy & Gordon 2003). Milroy & Gordon (2003) note that the most important factor in overcoming the observer’s paradox is to find a topic of interest to the speaker. For the present study, most of the subjects were in some way connected to

\textsuperscript{50} The present study was approved by Penn State University’s Human Subjects Review Board, IRB # 18136. Approval was given for informed consent to be obtained orally at the beginning of each interview. All required protocols were followed during data collection.
the study abroad program of a mid-western American university. Many of the upper class speakers either serve as host families for the program, or are connected through colleagues to someone who does. Likewise, many of the lower class speakers are employed as domestic servants with the host families, or are in someway connected to the program through a friend or family member. Since the researcher was often introduced as an alumnus of the program in Mérida, the interview usually began with questions about their experiences with American students, how well the students adapt to life in Mérida, and how they became involved with the program or with the family with which the students were living. Speakers in general responded well to this line of questioning, as it provided a relaxed but not too personal opener for the rest of the conversation. This portion of the interview usually lasted only a few minutes. Afterwards, the interview continued with topics of interest to the speakers, with the goal of obtaining a sample of natural speech. For example, a frequent topic raised with married subjects was that of their wedding day, their anniversaries, children, and what advice they would give to newly married couples. This line of questioning often led to long periods of reminiscing and personal anecdotes on the part of the speakers, again helping to distract them from the purpose of the interview. Additional topics discussed with many of the speakers included family history, changes in daily life in Mérida since their childhood, local legends, childhood experiences, and cultural activities of the region. Importantly, the researcher was careful to allow the subject to guide the conversation, thereby giving them more feeling of control during the interview. This open-ended nature also led to the feeling of a conversation, as opposed to a formal interview. These methods were successful in putting the subject at ease, as can be heard through the laughing and joking
that frequently takes place during the interview. Overall the interviews were relaxed and light-hearted, contributing to their success in capturing an informal level of speech from the participants.

For ten of the participants, the final portion of the interview consisted of discussing questions on language use in Mérida, using the language attitude questionnaire described in the materials section below and found in the appendix. While this line of questioning was more formal and language-focused than free conversation, it always occurred at the end of an open conversation, after the participants were comfortable with the researcher and with the recorder. With few exceptions, this portion of the interview, while more structured, maintains the conversational nature found throughout all the interviews. Initial results of this pilot attitude questionnaire are presented in Chapter 1 of this dissertation.

4.2 Selection of Participants

The participants in this study are native-born speakers of Yucatan Spanish recorded in or around the city of Mérida, Mexico\textsuperscript{51}. The corpus consists of a total of forty speakers recorded, with the following breakdown by gender and class: 19 men, 21 women, with a total of 25 (middle)/upper class and 15 lower class speakers. The speaker totals for the three variables of gender, age, and socioeconomic class are summarized in the following table.

\textsuperscript{51} Four of the interviews were recorded in the nearby city of Izamal. Of the speakers, 19 were born in the city of Mérida, 20 were born elsewhere within the state of Yucatan.
As can be seen in Table 3, the speakers were divided into lower and upper class. A conscious decision was made to examine the two extremes of socioeconomic class in Yucatan, in order to avoid any potential confounding problems with defining middle class in Mexican society. Although previous studies on Yucatan Spanish included a three-tier division of socioeconomic status, it is not always clear that middle and upper class speakers are differentiated by their speech. Additionally, when the researcher asked speakers about the difference between middle and upper class, the most common answer was that it was a question of family; that is, a member of a well-known family is considered upper class, regardless of their profession or education. In order to get a clearer picture of linguistic variation in Yucatan Spanish, for the present study the subjects were divided into two groups: those representing the upper end of the socioeconomic spectrum, contrasted with those found at the lower end. A speaker’s occupation formed the basis of their placement in one or the other class group in the following manner. The upper end of the class spectrum was identified, when possible, through professions that would generally be accompanied by a title in Yucatan society;

<table>
<thead>
<tr>
<th>Variables</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
<td>19-29</td>
</tr>
<tr>
<td>Class</td>
<td>L</td>
</tr>
<tr>
<td># of subjects</td>
<td>1</td>
</tr>
</tbody>
</table>

52 For example, Garcia Fajardo (1984) shows identical frequencies of intervocalic [b d g] for middle and upper class speakers (pp. 38-41). The difference in frequency corresponds to the distinction lower class vs. non-lower class. Additionally, the fundamental distinction in class for linguistic variables is that of manual versus non-manual laborers. (Chambers 2003) That important distinction is maintained here.
college graduates (*licenciados*), lawyers, architects, professors, and businessmen, among others. Note that most of these speakers would probably be classified as upper-middle class. The lower class speakers were also identified by their profession; manual laborers, maids and other household workers, and market workers. With a few subjects (secretaries, college students from lower class families), the speaker’s background and education were taken into account when assigning them to one of the two classes. Clearly education plays a role in this upper and lower-class distinction, but was not in itself a factor in determining class. An important result of this method of class distinction is that within the two groups there is some variation, such that some of the speakers could conceivably be labeled as upper or lower middle class in a three-way class division. This assures that the study has captured the breadth of speaker variation within Yucatan.

Bilingualism with Mayan was considered as a secondary variable in this dissertation; a complete study of the possible influence of Mayan on Spanish is reserved for future study. Speakers were divided into three language groups: monolingual Spanish-speakers, fluent Mayan-speakers, and speakers with some knowledge of Mayan, defined as speakers whose parents or grandparents speak Mayan, and who can at least understand a conversation in that language, even if they respond in Spanish. Of the speakers studied in this dissertation, 21 speak at least some Mayan (13 are fluent Mayan-speakers, 8 speak some Mayan), and 19 are monolingual Spanish-speakers.

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53 Housewives were assumed to be of the same class as their husbands, even if they themselves did not work or attend college. Thus the wife of a businessman or lawyer was also categorized as upper class for the purposes of this study. In practice, most of the upper class women in this study are currently employed or have been employed at some point in the past.
The researcher contacted subjects via connections established through his colleagues in Mérida. Following the “snowball” technique (Milroy & Gordon 2003, p. 32), also known as network sampling (Hammersley & Atkinson 1995), the researcher was introduced to potential subjects as a “friend of a friend”. This technique, used in previous studies (Milroy & Milroy 1978), enables the researcher to quickly contact potential subjects, and has the effect of a very low rejection rate among potential informants.

Additionally, the researcher lived with a local family, and participated in daily life within the city and especially within the neighborhood. He shopped, walked, caught buses, ate and attended church with local residents. This role as a partial “observer-participant” (Milroy & Gordon 2003, p. 68) also enabled quick access to speakers of all social classes, and speakers often mentioned that the researcher was their friend, welcome in their home. This was reflected in the friendly, casual tone heard in most of the recorded conversations. It was also known that the researcher was connected, through his undergraduate alma mater, to a long established and highly respected study abroad program in Mérida. On many occasions mentioning that the research was an alumnus of the program gained access to willing participants.

54 Traditionally, an “observer-participant” has lived or worked within a community over a period of months or years before and during research. In the present study, the researcher was accepted as part of the community, due to previous visits to Mérida, living with a local family, participating in the life of the neighborhood, and connections with the study abroad program. Also, the fact that a pilot study had been done the preceding year allowed the researcher to make professional contacts that made him known among many potential subjects. So while he did not meet the true definition of an ‘observer-participant’, the researcher did enjoy many of the short-term benefits of this method.

55 Moreno Fernández (1990) provides advantages and disadvantages of different observer roles within the studied community (pp. 74-77).
As Table 3 shows, all cells except 1 contain speech samples from at least 2 speakers, and most have 3 or more speakers. The subject pool ensures that any phonetic variability observed is not idiosyncratic in nature. In this way a concrete picture of variation for the eight variables studied here for Yucatan Spanish is ensured.

4.3 Materials

As stated previously, the present study is based on a corpus of 40 recordings made by the researcher in or near Mérida, Mexico. The recordings vary in length from 6-45 minutes\(^{56}\), with an average length of approximately 25 minutes, and were made using a Sony Digital Mini-Disc recorder and Sony external tabletop microphone. The corpus consists of approximately 16.5 hours of recorded speech, for an approximate total of 106,966 words. The literature varies with regards to the recommended length of recording time, but for the study of phonetic variables a short recording is sufficient given the large number of tokens of any given phoneme that are likely to arise in any sample of speech (Milroy & Gordon 2003, p. 58). Additionally, Labov (1966) argues that between 10-20 tokens of a variable are enough to determine the degree of variation and that likewise 10-20 speakers per socioeconomic class provide a realistic picture of overall stratification (p. 117). The present study meets or exceeds both of these criteria. Labov (1966) also shows that recordings as short as 15 minutes can provide an accurate picture of a speaker’s use of linguistic variables (p. 119). Given that the average length of most

\(^{56}\) There are three interviews under 15 minutes, obtained in public settings such as a marketplace.
of the interviews in the present corpus is 25 minutes, the overall picture of phonetic variables in Yucatan Spanish afforded by the study is an accurate one.

In addition to the recordings, all speakers were given a language background questionnaire, either written or orally, designed to determine pertinent information on each subject’s age, occupation, education, place of birth and residence, experience with other languages, and contact with Mayan. This information formed the basis for the analysis of social variables discussed below and in Chapter 5. A copy of the background questionnaire can be found in Appendix B.

4.4 Data Analysis

Following the lead of Yager (1982) and Durand & Pukli (2004), the recordings were first transcribed orthographically. Durand & Pukli (2004) demonstrate that preliminary transcription in orthography has become the norm, given the many advantages of delaying phonetic transcription until data analysis. After experimentation with several transcription techniques and software programs, the present study again followed the advice of Durand & Pukli (2004) and transcribed directly into the phonetic analysis program PRAAT (Boersma & Weenink 2005). This allowed for easy searching of the corpus and direct access to the sound file and corresponding spectrogram when more specific phonetic transcription of certain variables was required (Durand & Pukli 2004, pp. 3-6).

Again, the goal of the present study is to shed light upon the role of sociological variables (age, gender, class) on the production of typically Yucatecan phonological/phonetic variables, (-n), (b d g) (p t k) (ʔ), as defined by previous studies on
the dialect. Additionally, linguistic context for each variable forms part of the multivariate analysis. To meet these goals, the next step in preparing the data involved coding the variables for statistical variable rules (multivariate) analysis (VARBRUL) using the GoldVarb 2001 for Windows software. This was facilitated by the freeware program Transpraat, designed to convert Praat text annotations into one text file (Abderrahim 2001). This analysis permitted the determination of the correlations between linguistic and extralinguistic variables, which form the core of the present study.

Tokens were coded for the social factors, age, gender, social class, and knowledge of Mayan. Coding also entailed linguistic factors, such as allophonic variant, phonetic context, and word type, among others. A detailed examination of coding for each variable can be found in the corresponding section in Chapter 5. The coded tokens were submitted to quantitative analysis with Gold Varb 2001. This study includes frequency data, cross-tabulations, and two statistical analyses, ‘one-level’ and ‘step-up/step-down’. ‘One-level’ analysis provides factor weights for each linguistic or social group in the study based on their relative importance to the production of a particular linguistic variant. These weights range from 0 to 1, and a weight greater than 0.5 is considered indicative of a positive correlation for that factor. A ‘step-up/step-down’ analysis consists of a series of ‘one-level’ runs that determine the statistical significance of each factor group. A group that is selected by the ‘step-up/step-down’ analysis contributes significantly to the production of the linguistic variant in question (cf. Paolillo 2002, pp. 78-82).

In sum, this chapter has shown that the present study is composed of sociolinguistic interviews of 40 native speakers of Yucatan Spanish, recorded during fieldwork by the author. The subjects are divided by gender (M or F), age (19-29, 30-49,
50 +), and social class as determined primarily by occupation (middle/upper class or lower class). A speaker’s knowledge of Mayan was also coded. The recorded interviews were transcribed orthographically, and the typical Yucatan phonetic variables (final nasals, intervocalic voiced stops-fricatives, aspirated voiceless stops, and glottal stop (hiatus) insertion) were coded for quantitative variable rules analysis (VARBRUL). The results of the quantitative VARBRUL analysis of both the sociolinguistic interviews are found in the next chapter.
Chapter 5

Results and discussion

5.0 Introduction to results

This chapter will present the results of the statistical and frequency analyses for each of the phonetic variables studied: (-n), (b d g). Additionally, pilot data for (k) and (ʔ) are discussed. A brief discussion of the results for each variable will follow the analysis. General conclusions based on the dialect as a whole will appear in chapter 6.

5.1 The variable (-n)

As discussed in Chapter 2, Yucatan Spanish displays the range of final nasal variants found in other varieties of Spanish ([n] [ŋ] [Ø]), in addition to a labial variant that occurs only sporadically outside of the Yucatan ([m]) (Lope Blanch 1980/1987). Since [m] is a variant primarily associated with Yucatan Spanish, this analysis will focus on the frequencies of [m] and the factors that condition its use. The labial nasal [m] can be distinguished from the alveolar [n] and the velar [ŋ] in an acoustic analysis by examining the formant transitions from the preceding vowel. While the F1 transition is
relatively consistent for the three places of articulation, the F2 transition can serve to
distinguish the labial from the other two variants\textsuperscript{57}.

Several studies have shown that the articulatory cues that transition into coda
consonants are much weaker than those for internal or medial consonants (cf. Jun 1995
and Winters 2000). Still, the difference in F2 transition for each of the three points of
articulation can be seen in the following stylized diagrams of F1 and F2 transitions
(adapted from Kent & Read 1992, pp. 116-117).

Figure 3: Stylized formant transitions from [a] into a labial consonant (cf. están ‘they are’
in Figure 4). Adapted from Kent & Read (1992).

As Figure 3 demonstrates, both F1 and F2 evidence a falling transition as they
transition from the vowel to the following consonant. This pattern can be compared to the
rising transition in F2 for alveolar and velar consonants.

\textsuperscript{57} F3 also plays an important role in distinguishing alveolar and velar stops; since the goal here is to
separate labial [m] from the other two variants, the present discussion will focus on F2 transitions, which
are sufficient to separate labials from other points of articulation (Kent & Read 1992, pp. 116-117).
Of course, given the relative weakness of transitions into coda consonants, the place of articulation cues are not always clearly visible from a spectrographic analysis. Still, the following three spectrograms illustrate the ability to distinguish labials from alveolars and velars; Figure 6 clearly shows a downward transition in both F1 and F2 from the vowel into the consonant.
Figure 6: Labial [m]: spectrogram for *en que están* ‘that they are in’ spoken by an upper-class male informant. The arrow indicates falling F1 and F2 formant transitions into the nasal.

Figure 7 shows the transition into alveolar [n]. Again, due to the lack of clarity in transition into a coda consonant, the slight rise in F2 is not as clear as the drop for [m] in Figure 4, but the importance for the present study lies in distinguishing labial [m] from the other final nasal variants. As Figures 6, 7, and 8 demonstrate, the difference is clear due to the falling transitions for [m].
Finally, Figure 8 displays a sharp rise in F2 indicative of velar consonants. While it is often difficult to distinguish alveolars from velars in final position, as these figures indicate, both are easily differentiated from labial [m].
Previous descriptions of [m] state that the labial variant occurs in absolute final position, i.e. before a pause. In order to confirm this observation, an initial analysis was conducted based on 14702 coda nasal consonants. 1093 of these occurred in absolute final position; the remaining 13609 tokens occurred in other positions. Phonetic contexts in which nasal consonants neutralize in Spanish (i.e. before a bilabial stop) were not counted as instances of [m]. The following table shows frequencies for all coda nasal variants.

<table>
<thead>
<tr>
<th>Variant</th>
<th>Tokens</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[n]</td>
<td>14229</td>
<td>97%</td>
</tr>
<tr>
<td>[m]</td>
<td>292</td>
<td>2%</td>
</tr>
<tr>
<td>[Ø]</td>
<td>64</td>
<td>0%</td>
</tr>
<tr>
<td>[ŋ]</td>
<td>117</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>14702</td>
<td>100%</td>
</tr>
</tbody>
</table>
As the data in Table 4 clearly shows, [m] occurs very infrequently throughout all of the data, accounting for only 2% of coda nasals. The overwhelming preference for coda nasal variant in Yucatan Spanish is the ‘standard’ alveolar [n], which accounts for 97% of the total. Nasal deletion and velarization account for little more than 1% of the total nasal variants. Previous studies, however, report that [m] occurs primarily in absolute final position. In order to test the validity of this statement for the present data, the frequency of [m] in the entire data set was compared to that in absolute final nasals only.

Of the 14702 coda nasals in the present corpus, 1093 tokens occur in absolute final position. As seen in Table 5, the present data confirms earlier reports of [m] in Yucatan Spanish. While its total frequency is low, [m] does constitute a considerable number of nasal consonants in absolute final position.

<table>
<thead>
<tr>
<th>Table 5: Frequency of [m] in absolute final position; VARBRUL weights for [m] comparing absolute final position to all coda nasals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of [m] out of 1093 absolute final tokens</td>
</tr>
<tr>
<td>VARBRUL weights for [m] based on position</td>
</tr>
</tbody>
</table>

58 ‘Standard’ Spanish will be used throughout this chapter to refer to accepted international norms for Spanish; i.e. not local, isolated varieties. The use of this term in no way suggests that all speakers of Spanish outside of the Yucatan speak in the same way. Clearly, the standard final nasal in many regions is [n], but likewise many regions (e.g. the Caribbean) demonstrate a local standard of [ŋ]. ‘Standard’ Spanish here refers to that spoken by monolingual speakers in a non-contact environment.
Both the frequency (25%) and VARBRUL weight (0.994) of [m] in absolute final position demonstrate that [m] occurs primarily in this context. Therefore, the rest of this analysis will focus only on absolute final nasals.

First, an examination of frequencies for all nasal variants in absolute final position shows that while [n] is still the preferred variant, [m] now accounts for one quarter of the nasal tokens.

Interestingly, velarization accounts for only 9%, a somewhat surprising figure given that many of the dialects that surround Yucatan Spanish show velar [ŋ] as the preferred final nasal (e.g. Caribbean Spanish (Lipski 1994)). In Yucatan Spanish, however, the alveolar or labial variants account for 86% of all absolute final nasals. Since [m] is so rare cross-dialectically and has been identified with Yucatan Spanish, the following VARBRUL analysis of linguistic and social factors will collapse the other three variants ([n] [Ø] [ŋ]) into one category that can be called ‘widespread’ or ‘common’ nasal variants, given that all three of these occur throughout the Spanish-speaking world. This will allow for a focused analysis of factors that contribute to the production of [m] versus one of the other possible variants. The next section will detail linguistic factors that condition [m], followed by an analysis of the contribution of social factors.

Table 6: Frequencies and percentages for all nasal variants; absolute final position

<table>
<thead>
<tr>
<th>Variant</th>
<th>Tokens</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[n]</td>
<td>663</td>
<td>61%</td>
</tr>
<tr>
<td>[m]</td>
<td>274</td>
<td>25%</td>
</tr>
<tr>
<td>[Ø]</td>
<td>59</td>
<td>5%</td>
</tr>
<tr>
<td>[ŋ]</td>
<td>95</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>1091</td>
<td>100%</td>
</tr>
</tbody>
</table>
5.1.1 [m]: linguistic factors

The initial analysis of linguistic factors that may contribute to the production of [m] included: 1) the word class for each token (noun, adjective/adverb, verb, preposition, determiner\(^59\)); 2) if the word is of Mayan origin; 3) the preceding vowel (low, mid, high; back, mid, front); 4) and whether the nasal occurred in a stressed syllable. The VARBRUL results for these linguistic factors are seen below.

Table 7: VARBRUL weights for linguistic factors conditioning [m]; significant result marked by *

<table>
<thead>
<tr>
<th>Factor group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word class</td>
<td></td>
</tr>
<tr>
<td>Noun</td>
<td>0.553</td>
</tr>
<tr>
<td>Adjective/Adverb</td>
<td>0.499</td>
</tr>
<tr>
<td>Verb</td>
<td>0.433</td>
</tr>
<tr>
<td>Preposition</td>
<td>0.586</td>
</tr>
<tr>
<td>Determiner</td>
<td>0.258</td>
</tr>
<tr>
<td>Word Origin</td>
<td></td>
</tr>
<tr>
<td>Mayan</td>
<td>0.428</td>
</tr>
<tr>
<td>Other</td>
<td>0.512</td>
</tr>
<tr>
<td>Preceding vowel</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.533</td>
</tr>
<tr>
<td>Mid</td>
<td>0.429</td>
</tr>
<tr>
<td>High</td>
<td>0.494</td>
</tr>
<tr>
<td>Back</td>
<td>0.541</td>
</tr>
<tr>
<td>Mid</td>
<td>0.543</td>
</tr>
<tr>
<td>Front</td>
<td>0.422</td>
</tr>
<tr>
<td>*Syllable</td>
<td></td>
</tr>
<tr>
<td>Stressed</td>
<td>0.547</td>
</tr>
<tr>
<td>Unstressed</td>
<td>0.424</td>
</tr>
</tbody>
</table>

Chi-square per cell: 0.9169
While the data in Table 7 is useful for understanding trends in the data, the only linguistic factor chosen as significant by the step up/step down analysis is syllable type; [m] is significantly more likely to appear in stressed syllables than in unstressed syllables. The other factors illustrate trends in the data, but for statistical purposes none of them has an important effect on the production of [m].

Previous investigation suggested that the choice of final [m] is, at least in part, lexicalized; that is, [m] arises regularly as the normal pronunciation in some words, while occurring only sporadically in others (cf. Michnowicz in press, who found 74% [m] in the name Colón). An examination of word frequencies with [m] in the present corpus lends further weight to this hypothesis. The following table shows the individual words from this study that surfaced with [m] in more than five tokens.

<table>
<thead>
<tr>
<th>Word</th>
<th>Total # of tokens</th>
<th># of tokens with [m]</th>
<th>% of word with [m]</th>
<th>% of all instances of [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bien</td>
<td>112</td>
<td>30</td>
<td>27%</td>
<td>11%</td>
</tr>
<tr>
<td>También</td>
<td>61</td>
<td>21</td>
<td>34%</td>
<td>8%</td>
</tr>
<tr>
<td>Yucatán</td>
<td>90</td>
<td>21</td>
<td>23%</td>
<td>8%</td>
</tr>
<tr>
<td>Con</td>
<td>38</td>
<td>16</td>
<td>42%</td>
<td>6%</td>
</tr>
<tr>
<td>Cancún</td>
<td>28</td>
<td>8</td>
<td>29%</td>
<td>3%</td>
</tr>
<tr>
<td>Son</td>
<td>28</td>
<td>8</td>
<td>29%</td>
<td>3%</td>
</tr>
<tr>
<td>Camión</td>
<td>8</td>
<td>6</td>
<td>75%</td>
<td>2%</td>
</tr>
<tr>
<td>Nilón*</td>
<td>10</td>
<td>6</td>
<td>60%</td>
<td>2%</td>
</tr>
</tbody>
</table>

*occurred only in the speech of one speaker

---

59 Although most Mayan origin words are place names with final stress (i.e. Yucatán), the overall few tokens of Mayan origin may have affected the analysis of this factor. In the present corpus, there were a total of 156 nouns of Mayan origin out of 1091 total words in absolute final position.
The eight words in Table 8 are those for which more than five of the tokens in the corpus were produced with [m]. Of these, *bien* ‘well’ was the most frequent word, with [m] occurring in 30 of the 112 tokens of the word in absolute final position. *También* ‘also’ and *Yucatán* were the next most frequent, at 21 tokens each. With regard to the percentage of tokens with [m], however, *camión* ‘bus’ occurred most frequently, with [m] 75% of the time, followed by *nilón* ‘nylon’ (produced by one speaker, a hammock seller) at 60%, and *con* ‘with’ at 42%. Overall, the most frequent eight words with [m] account for 43% of all tokens of [m] in the corpus. The remaining 57% of the tokens are comprised of words that occur with [m] in five tokens or less; 34% occur with [m] only once. In absolute final position, then, [m] appears to be in part conditioned lexically. *Camión* arises with [m] at a rate (75%) almost identical to that of *Colón* in Michnowicz (in press) (74%). Still, the most frequent words with [m] account for less than half of the total labialized tokens, demonstrating that the frequency of [m] in this study is not driven by a few high frequency tokens. Rather [m] occurs more often in some words than in others, but also arises sporadically throughout the lexicon. This is what one would expect if [m] were undergoing lexical diffusion in Yucatan Spanish, a process by which a feature spreads from word to word in a particular context (cf. Labov 1994 Ch. 15). Future studies are required to determine the course of [m] in the dialect.

---

60 Although most Mayan origin words are place names with final stress (i.e. *Yucatán*), the overall few tokens of Mayan origin may have affected the analysis of this factor. In the present corpus, there were a total of 156 nouns of Mayan origin out of 1091 total words in absolute final position.
5.1.2 [m]: social factors

As explained in Chapter 4, the subjects in this study were balanced to the extent possible for the social factors of gender, age, and socioeconomic class\(^{61}\). Bilingualism with Yucatec Mayan was also considered as a factor, although the subject pool was not balanced for monolingual and bilingual speakers. The following discussion details three separate analyses; an initial analysis with the three primary factors of gender, age, and class, which was accepted as valid by the statistical software (VARBRUL). Next, the variable of bilingualism was added to the analysis. This analysis was not accepted as statistically valid by the software, due to error rates with one speaker, 103. Once this speaker’s data was removed from the model, an acceptable fit was obtained\(^{62}\). Possible explanations for speaker 103’s behavior are addressed. Finally, the third analysis includes the tokens from the problematic speaker. While this model was rejected, the same factor rankings are obtained as in the valid model. Comparing these analyses with frequencies and with cross tabulations of gender, class, age, and language allow for a more complete view of the patterning of [m] in the dialect.

\(^{61}\) Recall that class was implemented as a binary variable, ‘lower’ versus ‘middle/upper’. This is undoubtedly an oversimplification of class structure in Yucatan, but for the purposes of the present study does capture the fundamental distinction between ‘white collar’ and ‘blue collar’ workers (Chambers 2003, p. 42).

\(^{62}\) Note that a ‘collapsed factors’ analysis, combining for example language and class or gender and age produced better model fits for all variables. Each variable required a different combination of collapsed factors, however, which made comparison across variables difficult. For the purposes of comparison, each variable was submitted to a ‘no recode’ with the four factors of ‘gender’, ‘age’, ‘class’ and ‘language’. These analyses, while not always obtaining an ideal model fit, did show an overall linear distribution, and errors are addressed via frequencies and cross-tabulations.
5.1.2.1 First VARBRUL analysis with variables ‘gender, age, and class’

The initial VARBRUL run included the three primary social variables in the analysis; gender, age, and class. The results show that both gender and age are statistically significant factors in determining [m] usage; class was not selected as significant during the step-up/step-down analysis.

Table 9: Initial VARBRUL run for [m]: gender, age, class. Significance is indicated by *

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.548</td>
</tr>
<tr>
<td>Male</td>
<td>0.456</td>
</tr>
<tr>
<td>*Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>0.583</td>
</tr>
<tr>
<td>30-49</td>
<td>0.646</td>
</tr>
<tr>
<td>50+</td>
<td>0.363</td>
</tr>
<tr>
<td>Social class</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>0.494</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
<td>0.503</td>
</tr>
</tbody>
</table>

Chi-square per cell: 1.3832

With regards to gender, women use more [m] than men. This difference was selected as significant. Likewise, age was a significant factor in determining use of [m]; older speakers use dramatically less [m] than either middle or young speakers. Finally, as seen in the very close factor weights, class was not selected as a significant factor in the production of [m]. This model, while incomplete, allowed for an initial understanding of the role of [m] as a sociolinguistic marker in Yucatan Spanish.
5.1.2.2 Second VARBRUL analysis; including variable ‘knowledge of Mayan’

The second VARBRUL analysis added the factor ‘bilingualism’ in order to obtain a more complete picture of the effect of knowledge of Mayan on the production of [m]. The inclusion of this variable, however, produced a statistical model whose fit was not accepted as valid by the software. Further analysis determined that the likely cause of this poor model fit was the error rate (15.585) for one speaker in particular. This speaker (103) is a well-educated, upper-class male who works primarily as an architect, but also teaches English and Spanish on the side. The speaker produced substantially less cases of [m] than the model predicted (1 application versus 11.645 predicted). In fact, this speaker is one of the more ‘standard’ speakers in the pool of informants for this variable, and it is likely that his profession as a teacher of Spanish to foreigners as well as his personal and professional connections with Spanish-speakers of other dialects have caused him to speak less prototypical Yucatan Spanish than many of his peers. In order to test the validity of the model for the rest of the speakers, the 31 tokens for this speaker were temporarily removed from the data. The subsequent VARBRUL run produced an acceptable fit.
The factor rankings for gender and age are identical to those in Table 9, with very similar weights for each factor. Both gender and age were identified during the step-up/step-down analysis as significant. The removal of an upper-class speaker who produced almost no [m] caused the class data to become skewed, producing a significant effect for upper class where there was none in Table 9. Finally, Table 10 shows a significant effect for knowledge of Mayan; monolingual speakers of Spanish produce significantly less [m] than do speakers with at least a passive knowledge of Mayan.

Since the removal of the tokens from one speaker provides for an incomplete picture of the effect of social factors on the production of [m], the tokens for 103M were reinserted, and the same analysis was run a second time. While the model was again rejected due to the error rate for that speaker, importantly the same factor rankings and significances were obtained as in Table 9 and Table 10. A subsequent collapsed factors
analysis, combining class and language, confirmed significantly more [m] among women, middle aged and young speakers, lower class fluent Mayan speakers and (middle)/upper class speakers with some knowledge of Mayan (chi-square per cell = 1.5975). These results are mirrored in the frequencies of [m] by social factor.

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>28%</td>
</tr>
<tr>
<td>Male</td>
<td>22%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>26%</td>
</tr>
<tr>
<td>30-49</td>
<td>36%</td>
</tr>
<tr>
<td>50+</td>
<td>15%</td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>26%</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
<td>24%</td>
</tr>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>30%</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>30%</td>
</tr>
<tr>
<td>Spanish Only</td>
<td>19%</td>
</tr>
</tbody>
</table>

Class, however, is still a problematic variable, and clearly interacts with language and possibly other social factors as well. Exploring the cross tabulations between these different factors allows for a clearer picture of who uses [m] in Yucatan Spanish.

5.1.2.3 Cross tabulations

As noted above, throughout much of the data the factors of class and language interact in ways that possibly affect the VARBRUL results seen in the previous section.
Cross tabulations, tables that examine these interactions among two factors, will assist in better understanding the patterning of [m] within the dialect. First, the interaction between class and language is evident in the table below.

Table 12: Cross tabulation: social class and language comparing production of [m] to other final nasal variants; $M =$ Mayan

<table>
<thead>
<tr>
<th></th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluent M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m:</td>
<td>26%</td>
<td>67%</td>
</tr>
<tr>
<td>other:</td>
<td>74%</td>
<td>33%</td>
</tr>
<tr>
<td>Some M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m:</td>
<td>26%</td>
<td>33%</td>
</tr>
<tr>
<td>other:</td>
<td>74%</td>
<td>67%</td>
</tr>
<tr>
<td>Span only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m:</td>
<td>--</td>
<td>20%</td>
</tr>
<tr>
<td>other:</td>
<td>--</td>
<td>80%</td>
</tr>
</tbody>
</table>

Table 12 presents percentages for use of [m] and other nasal variants by class and language. First, lower class speakers behave the same with respect to [m] regardless of whether they are fluent Mayan speakers (26% [m]) or have some knowledge of Mayan (26% [m]). Importantly, there are no lower class monolingual Spanish-speakers in the corpus. This is likely a trend that holds throughout the dialect region; if you are lower-class and native to Yucatan, you are very likely to speak Mayan. Likewise, if you are a
monolingual Spanish-speaker, especially above a certain age, as seen below, you are likely to be middle or upper-class. Next, it is clear that upper-class speakers with at least some knowledge of Mayan produce significantly more [m] than monolingual Spanish-speakers. These frequencies confirm the VARBRUL analysis in Table 10. Upper-class speakers with some Mayan language background produce [m] 33% of the time; the data for upper-class fluent Mayan speakers is based on one speaker, 226, who produces 67% [m], the highest individual frequency of [m] in the corpus. Speaker 226 is a well educated, middle-aged male who works as an anthropologist and also teaches Mayan language. He grew up in a Mayan-speaking household, and went on to become educated in the Spanish-speaking schools and university. This speaker in many ways represents an anomaly in Yucatan society, that of an upper-class college educated fluent Mayan speaker who is still very proud of his language and cultural heritage. The presence of this speaker in the corpus has important consequences for the present study. This speaker skews the data on [m] toward upper-class speakers, as seen when both language and class form part of the VARBRUL analysis (cf. Table 9 and Table 10); class was not a significant factor without considering language, but when knowledge of Mayan was introduced as a variable, a significant effect for class appeared. Thus the class data for this variable are unreliable, and the safest conclusion is that there is a slight, non-significant effect for class, although class will again enter as an interesting variable when

63 Fortunately, this situation appears to be changing, as more and more children of Mayan-speaking parents are integrated into the educational and economic mainstream of Yucatan society. This speaker hopefully represents a brighter future for the region’s Mayan speaking citizens.
comparing this factor to age. The following table shows the cross tabulation of age and class.

<table>
<thead>
<tr>
<th></th>
<th>19-29</th>
<th>30-49</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower class</strong></td>
<td>30%</td>
<td>32%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>other</strong></td>
<td>70%</td>
<td>68%</td>
<td>82%</td>
</tr>
<tr>
<td><strong>Upper class</strong></td>
<td>25%</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td><strong>other</strong></td>
<td>75%</td>
<td>60%</td>
<td>85%</td>
</tr>
</tbody>
</table>

As seen in Table 13, speakers over 50 years of age produce similar frequencies of [m] regardless of class (18% vs. 15%), and these speakers are much less likely to use [m] than speakers under 50. It is also interesting that the frequencies of [m] are highest among lower class speakers above 50 and below 30, but among middle aged speakers the highest frequency occurs in the (middle)/upper class. This trend, along with the positive correlation between Mayan language and [m] production seen in Table 10, seems to indicate that the speakers that most use [m] are those that come from lower class Mayan-speaking families and have begun to enter the economic mainstream. In other words, the speakers 30-49 years of age that are now middle/upper class grew up as lower class speakers (and therefore obviously were raised by lower class parents), and it is only through recent educational and employment opportunities that these speakers have been
able to improve their social standing. A possible prediction, then, is that as the younger lower class speakers finish school and seek employment outside of domestic work, there will be diagonal movement of \([m]\) production in Table 13; today’s young lower class speakers are tomorrow’s middle-aged upper class speakers. Whether this trend will continue is impossible to say, but it is clear from looking at the present data that those most likely to use \([m]\) are the children and grandchildren of poor, Mayan-speaking families who have succeeded in entering the middle or upper classes of Yucatan society.

Finally, comparing the roles of gender and age will help complete the picture of \([m]\) usage in Yucatan Spanish.

\[\begin{array}{cccc}
\text{Female} & \text{Male} \\
19-29 & m: & 32 \% & 22\% \\
 & \text{other:} & 68 \% & 78\% \\
30-49 & m: & 40\% & 33\% \\
 & \text{other:} & 60\% & 67\% \\
50+ & m: & 17\% & 14\% \\
 & \text{other:} & 83\% & 86\% \\
\end{array}\]
The cross tabulation in Table 14 shows similar results to those for age and class in Table 13. First, young women use substantially more [m] (32%) than do young men (22%). Next, middle-aged speakers of both genders use more similar frequencies of [m] (40% women, 33% men). As expected from the VARBRUL results, older speakers use far less [m]. Several interesting facts are clear from the data in Table 14; first, women use more [m] than men for all age groups. This was expected from the VARBRUL analysis in Table 10. Second, the difference in frequency between men and women increases as the speakers decrease in age; the oldest speakers differ by 3%, middle aged speakers by 7%, and the youngest speakers by 10%. This is a possible indication that as the variant [m] has increased in frequency, men have begun to relate [m] to ‘women’s speech’, and as such have retreated from this variant (cf. Labov 2001, p. 308). Synthesizing all of this data, the speakers most likely to produce [m] are young and middle-aged women who have at least some knowledge of Mayan; a cross tabulation of gender and language showed that women who speak some Mayan (i.e. the children or grandchildren of fluent Mayan speakers) produce [m] 57% of the time; compare this figure to men who speak some Mayan (24%). Among middle aged speakers of both genders, (middle)/upper class speakers produce more [m] (cf. Table 13).

5.1.2.4 [m] as change in progress?

As stated in Chapter 3, one of the goals of variationist sociolinguistics is to identify possible linguistic changes in progress. One of the ways in which this is achieved is by comparing frequencies of the variant in question across studies separated by a
certain amount of time. The examination of real time data for the same speech community allows the researcher to compare the dialect at two different points in time. Any observed differences between the two time periods indicate linguistic change (Labov 1994, p. 73). Importantly, none of the early studies (i.e. Barrera Vasquez 1937, Nykl 1938, Suarez 1945/1979, Mediz Bolio 1951) make any mention of final nasal labialization. The variant [m] is not studied until Alvar (1969), and frequency data is not available until the 1970’s and 1980’s. The fact that [m] is not mentioned in earlier studies suggests that it was a low frequency variant that did not merit space in studies that do mention other phonetic variables common in Yucatan Spanish. Analysis of data from three studies shows that [m] continues to increase in frequency in real time. First, Lope Blanch (1981/1987, p. 42), using data from the 1970’s Atlas lingüístico de México (Lope Blanch 1990), found 12% [m] in conversation data. García Fajardo (1984) found frequencies ranging from 5% to 40%, with most speakers producing less than 20% [m] (p. 76), and Yager (1989) found 41% [m]. Finally, the present study found 25% [m] across all speaker groups. The chart below summarizes these results across real time.

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64 Pfeiler (1992) mentions that [m] was first noted in a publication from 1898, although the source is not cited. Even so, none of the major works on Yucatan Spanish mentions labialized nasals until Alvar (1969).
65 This same study found 25% [m] in data from linguistic questionnaires, which seem to consist primarily of word-naming tasks (Lope Blanch 1981/1987). Lope Blanch argues that the frequency of [m] will be higher in this type of environment, since every final nasal uttered by the speaker will be in absolute final position (p. 42). Importantly, Michnowicz (in press) conducted a rapid and anonymous survey that found 74% [m] in what was essentially a word naming task with Avenida Colón. This result indicates that word-naming tasks still produce higher frequencies of [m], which has increased in use in conversation data as well.
Figure 9 shows an increase in [m] frequency in real time. These results parallel those found in apparent time in the present data. Apparent time compares the frequencies for a variant across age groups within the same study. The results for this dissertation are summarized below.

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66 The 1980’s frequency (31%) is an average between Garcia Fajardo (1984) who found 20% [m], and Yager (1989) who found 41% [m]. While this frequency appears too high for the population in general, it may be due to his speaker pool, since individually some speakers in the present study exceed 40% [m]. Based on previous studies, however, the present result of 25% seems realistic.
In Figure 10, a curvilinear pattern is apparent. There is a large increase in percentage of [m] from older speakers (15%) to middle aged speakers (36%). Importantly, these older speakers constitute the middle aged group for earlier studies that showed between 12% and 20%. As expected from the previous discussion, younger speakers show less overall [m] than middle aged speakers, due primarily to the retreat of male speakers from what they may view as a women’s variant. Importantly, other studies of change in progress have also found what Labov (2001) calls a “peak in apparent time” (pp. 454-455); the frequency of a variant undergoing change in progress often peaks in speakers anywhere from their teens to about age 30 (Labov 2001, pp. 454-460). This pattern is primarily true for female speakers acting as leaders in a change in

---

67 Recall that the discrepancy between male and female speakers increases as age decreases. The drop in overall young speakers’ use of [m] is primarily due to male speakers.
68 For an example of this peak in the lenition of (ch) in Panamanian Spanish, see Cedergren (1973, 1984).
progress (Labov 2001, pp. 456-457). Both real time and apparent time are seen to coincide with regard to the increase of [m] over time.

Thus the correlation of real time data, which shows an increase in [m] over the last 30 years, and apparent time data which shows a sharp increase of [m] in speakers under 50, suggests that [m] does represent a linguistic change in progress in Yucatan Spanish. Discussion of why [m] may be increasing in frequency will appear in Chapter 6.

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69 This peak is the product of the logistic curve pattern seen for variables undergoing change, and represents the point on the curve at which the maximum slope of change is achieved (Labov 2001, pp. 451-453). Another possibility is that the use of [m] has peaked, and is now in decline.
5.2 The variables (b d g)

As discussed in Chapter 2, most varieties of Spanish display an alternation between stops and fricatives for the voiced stops /b d g/\(^{70}\). In terms of features, this alternation is one of continuance; a sound with the specification [+continuant] is produced with partial constriction, whereas [-continuant] sounds occur with total closure (i.e. stops) (Chomky & Halle 1968, p. 317). In ‘standard’ varieties of Spanish, stops occur in absolute initial position and following nasal consonants; in addition to these contexts, the alveolar /d/ also surfaces as a stop following liquid /l/. The fricative variant arises elsewhere (Barrutia & Schwegler 1994, p. 118). Yucatan Spanish, however, often fails to produce this alternation, with stop variants surfacing in contexts where most varieties of Spanish prefer a fricative or approximant ([+cont])\(^{71}\). This section will detail the data for each of the voiced stops (b d g) individually. Following the discussion of the individual variables, patterns seen throughout the class are examined.

5.2.1 The variable (b)

As noted in the previous section, Yucatan Spanish often maintains the stop variant [b] in contexts in which ‘standard’ Spanish would prefer the [+cont] [β]. Acoustically, the

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70 As will be discussed in Chapter 6, many contact varieties of Spanish do not display this alternation. The term ‘monolingual Spanish’ should not be taken to imply that all speakers of Yucatan Spanish are bilingual; as the data will demonstrate, even monolingual Spanish-speakers in the Yucatan display some ‘bilingual’ traits.

71 As noted in the introduction, most of the [+cont] variants for these speakers of Yucatan Spanish are approximants, rather than true fricatives. Outside of the spectrograms, the term ‘fricative’ will be used, since stop-fricative is the traditional terminology for the [-cont][+cont] alternation in Spanish. It should be taken to mean [+cont], i.e., not a stop (cf. Chomsky & Halle 1968).
stop variant consists of a total closure of the vocal tract, which on a spectrogram appears as a period of silence. Voiced stops, such as [b], will demonstrate silence except for a slight amount of energy from the vibration of the vocal folds (Kent & Read 1992, p. 38). Fricatives or approximants, on the other hand, will not show the period of silence indicative of stops. The difference between the two variants can clearly be seen in the following spectrograms.

Figure 12: Stop [b]: spectrogram for *al haber* ‘when there are’ spoken by an upper-class male informant. Arrows the beginning and end of the stop.

In Figure 12, the period of silence (with the exception of voicing noise) can clearly be seen between the two arrows on the spectrogram. This silence is also visible in the waveform above the spectrogram. Compare Figure 12 to the following spectrogram showing the [+cont] [β].
In Figure A13, the tokens of [+cont] [β] blend in with the surrounding vowel formants and do not demonstrate the period of silence that distinguishes the stop in Figure 12.

The present corpus contains a total of 10108 tokens of the variable (b). As mentioned previously, (b) neutralizes in absolute initial position (following a pause) and following nasal consonants. Therefore tokens of (b) following a pause or a nasal consonant were not included in the analysis, leaving a total of 8809 tokens. The following table shows the frequencies and percentages for the two variants of (b) in the present study.

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In Spanish orthography, the variable (b) is represented as either ‘b’ or ‘v’.

---

Figure 13: [+cont] [β]: spectrogram for *ya ve que es abogado* ‘you already see that he is a lawyer’ spoken by an upper-class female informant. Arrows mark the two [+cont] [β]s in *ve* and *abogado*\(^{72}\).
As the data in Table 15 indicate, stop [b] accounts for slightly less than half of the tokens (42%). Since neutralizing contexts were removed from the analysis, the tokens of fricative [β] can be considered ‘standard’, since most monolingual dialects of Spanish would prefer the fricative variant in all 8809 tokens. At 42%, then, the stop variant represents a substantial percentage of possible (b) in Yucatan Spanish. The next section will detail the linguistic factors that contribute to the production of [b].

5.2.2 [b]: linguistic factors

The analysis of the linguistic factors that may contribute to a stop production of (b) included 1) the word class for each token (noun, adjective/adverb, verb, preposition); 2) the preceding segment (vowel or consonant); and 3) the following segment (vowel or consonant). The VARBRUL results for these linguistic factors are seen below.

<table>
<thead>
<tr>
<th>Variant</th>
<th>Tokens</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[b]</td>
<td>3732</td>
<td>42%</td>
</tr>
<tr>
<td>[β]</td>
<td>5077</td>
<td>58%</td>
</tr>
<tr>
<td>Total</td>
<td>8809</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 15: Frequencies and percentages for (b)
The results in Table 16 show tendencies in the data for (b). The only factor chosen as statistically significant by the step up/step down analysis was preceding segment; the stop variant [b] is significantly more likely to arise following another consonant. Based on this result, another analysis was undertaken to determine what consonants most condition the production of [b].

Table 16: VARBRUL weights for linguistic factors conditioning [b]; significant result marked by *

<table>
<thead>
<tr>
<th>Factor group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word class</td>
<td></td>
</tr>
<tr>
<td>Noun</td>
<td>0.503</td>
</tr>
<tr>
<td>Adjective/Adverb</td>
<td>0.494</td>
</tr>
<tr>
<td>Verb</td>
<td>0.502</td>
</tr>
<tr>
<td>Preposition</td>
<td>0.425</td>
</tr>
<tr>
<td>*Preceding segment</td>
<td></td>
</tr>
<tr>
<td>Vowel</td>
<td>0.487</td>
</tr>
<tr>
<td>Consonant</td>
<td>0.592</td>
</tr>
<tr>
<td>Following segment</td>
<td></td>
</tr>
<tr>
<td>Vowel</td>
<td>0.500</td>
</tr>
<tr>
<td>Consonant</td>
<td>0.502</td>
</tr>
</tbody>
</table>

Chi-square per cell: 0.9226

Table 17: VARBRUL weights for segment preceding [b]

<table>
<thead>
<tr>
<th>Factor group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preceding segment</td>
<td></td>
</tr>
<tr>
<td>/r/</td>
<td>0.610</td>
</tr>
<tr>
<td>/s/</td>
<td>0.600</td>
</tr>
<tr>
<td>Other consonant</td>
<td>0.585</td>
</tr>
<tr>
<td>/l/</td>
<td>0.566</td>
</tr>
<tr>
<td>Vowel</td>
<td>0.487</td>
</tr>
</tbody>
</table>

Chi-square per cell: 0.0001
As demonstrated in Table 17, the preceding consonants that condition the production of [b] in order are: /r/ > /s/ > other consonant\textsuperscript{73} > /l/\textsuperscript{74}. The next section will detail the social factors that condition [b] in Yucatan Spanish.

5.2.3 [b]: social factors

The discussion of the role of social factors in the production of (b) in this section includes frequencies for each variant, VARBRUL analyses, cross-tabulations, and data for [b] from real and apparent time. As for [m] in the previous section, an initial VARBRUL analysis was run using the three primary social factors of gender, age, and class. This model was rejected as a good fit for the data by the software. Further examination revealed that the source of the poor fit was the variable ‘class’. Thus a second analysis was run with only the factors ‘gender’ and ‘age’. This model was accepted by the software. An attempt was then made to achieve a more complete statistical model by including the remaining two social variables of ‘class’ and ‘knowledge of Mayan’. However, no combination of these two factors with the accepted factors ‘gender’ and ‘age’ produced a suitable model; likewise a collapsed factor group to test the interaction of ‘class’ and ‘language’ failed to produce an accepted model. A detailed examination of the overall frequencies of (b) for different groups of speakers and the analysis of cross-tabulations of factors will demonstrate both why the model failed to

---

\textsuperscript{73} Review of the data showed that ‘other consonants’ preceding [b] are primarily other stops, e.g. /f/ \textit{fútbol} ‘soccer’, /d/ \textit{advirtió} ‘he warned’, and /k/ \textit{mukbipollo} ‘a Mayan term referring to a large tamale traditionally eaten during \textit{Janal P ixan}, the Yucatecan version of Mexico’s ‘Day of the Dead’.

\textsuperscript{74} Yager (1982) cites Canfield (1962), stating that stop [b] was found to occur following these consonants in regions of Central America (p. 55).
produce acceptable results as well as the complex patterning of (b) for these speakers in Yucatan Spanish. 

5.2.3.1 VARBRUL analyses: [b]

As mentioned previously, an initial run including the primary social factors of gender, age, and class failed to produce a good model fit for the data. Thus a type of ‘manual step-down’ analysis was undertaken by removing one factor at a time until an acceptable fit was achieved. The removal of one factor from the analysis, ‘class’, produced an acceptable result. The following table shows the complete (rejected) VARBRUL run; a separate analysis with only ‘gender’ and ‘age’ produced an acceptable model, with similar weights and identical rankings.

For the discussion of (b), overall frequencies and cross-tabulations may be more reliable than VARBRUL analysis, given the apparent ‘non-systematic'-like nature of [b] with respect to most of the social variables.
While the analysis selected all four social factors as significant, it is important to remember that the model that includes ‘class’ and ‘language’ was rejected, as seen by the error rate (chi-square per cell) in Table 18. Again, no combination of factors or the collapsing of interacting factors produced an acceptable model. Therefore only the weights for ‘gender’ and ‘age’ should be considered reliable; the factor weights for ‘class’ and ‘language’ indicate some trends in the data, but as further analysis demonstrates, the picture of (b) production for these speakers is a complex one. In order to better understand who produced more tokens of [b], overall frequencies for each group were analyzed, followed by the cross-tabulations of factor interactions.

Table 18: Complete VARBRUL run for [b]: social factors; significance indicated by *. Shaded cells were included in the complete run, as well as analyzed separately.

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.520</td>
</tr>
<tr>
<td>Male</td>
<td>0.478</td>
</tr>
<tr>
<td>*Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>0.376</td>
</tr>
<tr>
<td>30-49</td>
<td>0.502</td>
</tr>
<tr>
<td>50+</td>
<td>0.560</td>
</tr>
<tr>
<td>*Class</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>0.463</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
<td>0.518</td>
</tr>
<tr>
<td>*Language(s)</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>0.526</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>0.559</td>
</tr>
<tr>
<td>Spanish only</td>
<td>0.463</td>
</tr>
</tbody>
</table>

Chi-square per cell (all factors): 14.7668 (model rejected); Chi-square per cell for gender and age only: 1.2200 (model accepted)
5.2.3.2 Frequencies by cell for [b]

The failure of the statistical analysis to produce a ‘good fit’ model due to high error rates and large number of outliers suggests that the patterning for (b) is complex within Yucatan Spanish. The frequencies of [b] for each social factor demonstrate little difference between groups, with the exception of the factor ‘age’.

Table 19: Frequencies of stop [b] by social factor group

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>43%</td>
</tr>
<tr>
<td>Male</td>
<td>40%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>30%</td>
</tr>
<tr>
<td>30-49</td>
<td>44%</td>
</tr>
<tr>
<td>50+</td>
<td>46%</td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>41%</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
<td>42%</td>
</tr>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>42%</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>44%</td>
</tr>
<tr>
<td>Spanish Only</td>
<td>41%</td>
</tr>
</tbody>
</table>

As Table 19 shows, there is little overall difference in frequency for three of the four social factors; gender differs by 3%, class by 1%, and language has a range of 4%. These frequencies demonstrate that the use of [b] differs little across speakers based on these three factors. Age, however, evidences a much greater range of frequencies (16%). This result, coupled with the problematic VARBRUL analysis in Table 18, suggests that the primary social factor in this analysis is that of ‘age’; the older the speaker, the more [b] they are likely to use.
5.2.3.3 Cross-tabulations for [b]

Cross-tabulations do indicate several interesting trends in the data. While ‘age’ is still the overriding factor in determining the production of [b], other patterns are evident. The first interesting interaction occurs between the factors of ‘gender’ and ‘class’. As the following table demonstrates, there is a diagonal similarity in the production of [b]; lower-class women and upper-class men pattern alike, as do lower-class men and upper-class women.

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower-class</strong></td>
<td>[b]: 37%</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>[β]: 63%</td>
<td>54%</td>
</tr>
<tr>
<td><strong>Upper-class</strong></td>
<td>[b]: 47%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>[β]: 53%</td>
<td>62%</td>
</tr>
</tbody>
</table>

Table 20: Cross-tabulation: gender and class comparing [b] and [β]

Given the cross-tabulation in Table 20, the difficulty in obtaining a statistical ‘good fit’ for the data is not surprising; women and men appear to ‘switch’ frequencies for [b] across class boundaries (lower-class women 37%, upper-class men 38%; lower-class men 46%, upper-class women 47%). This result is hard to explain, and may again reflect the movement of the (female) children of poorer families into the economic mainstream; as these women obtain increased education and enter the workforce, they take their first-
language ($L1$, in this case, Mayan) influenced [b] with them into the upper classes\textsuperscript{76}. This hypothesis is borne out by the interaction of gender and language, where women with some knowledge of Mayan demonstrate the highest frequency of [b] in the present corpus\textsuperscript{77}.

Table 21: Cross-tabulation: gender and language for (b); ‘M’ = Mayan

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluent M</td>
<td>[b]: 36%</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>[β]: 64%</td>
<td>51%</td>
</tr>
<tr>
<td>Some M</td>
<td>[b]: 52%</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>[β]: 48%</td>
<td>61%</td>
</tr>
<tr>
<td>Span only</td>
<td>[b]: 46%</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>[β]: 54%</td>
<td>64%</td>
</tr>
</tbody>
</table>

\textsuperscript{76} It will be argued in chapter 6 that [b] is not due to the influence of Mayan per se, but rather to a second language ($L2$) variety of Spanish spoken by generations of Mayan-dominant Yucatecans, given that [b] also arises in other bilingual regions in the Spanish-speaking world (cf. Lipski 1994).

\textsuperscript{77} In a VARBRUL analysis with collapsed factors, the group with the highest factor weight (0.722) is that of (middle)/upper-class women with some knowledge of Mayan. The next highest factor weight occurred for (middle)/upper-class men with some knowledge of Mayan (0.594). As mentioned previously, none of these models produced a good fit; the trends however are confirmed by the cross-tabulations.
Again, the discrepancy among gender and class is clear\textsuperscript{78}. Among fluent Mayan speakers (with one exception all belonging to the lower class) men produce more [b] (49\%) than do women (36\%). The results are the opposite, however, for those that speak some Mayan or are monolingual speakers of Spanish; women use more [b] than men in these groups. The highest frequency in the corpus is that of women with some knowledge of Mayan (52\% [b]). These numbers again suggest that as women move into the middle/upper classes and gradually transition to becoming monolingual speakers of Spanish they retain their L2-influenced [b] for some time. Men demonstrate the opposite trend; as men transition from lower-class to middle/upper-class and from speaking fluent Mayan to becoming monolingual Spanish-speakers, their use of the ‘standard’ [\beta] increases (cf. Tables 20 and 21). This may be due to the fact that men began improving their social and economic standing at an earlier point in time than did women. Women thus lag a generation behind men in their standardization of the variable (b)\textsuperscript{79}. This possibility will be addressed further in Chapter 6.

5.2.4 (b) as language change in progress?

The comparison of frequencies for [b] in both real time and apparent time suggest that Yucatan Spanish is undergoing standardization of (b), demonstrated by a decreased

\textsuperscript{78} Especially for older speakers, there is a strong correlation between class and language; until recently, upper classes spoke only Spanish and lower classes were bilingual speakers of Mayan. In the present corpus, fluent Mayan equates with lower class, with the exception of the college-educated Mayan language instructor seen in the previous section.

\textsuperscript{79} This possibility is in line with the gender paradox, which Labov (2001) defines as: “Women conform more closely than men to sociolinguistic norms that are overtly prescribed, but conform less than men when they are not” (p. 293).
use of [b] where ‘standard’ Spanish would prefer [β]. Real time data from several studies show this trend. Alvar (1969) found only [b] in seven of his ten informants, stating that the fricative [β] is almost unknown in the Yucatan (pp. 164-165). Likewise, García Fajardo (1984) showed a preference for [b], with a majority of speakers producing the stop variant with a frequency of 60% or greater (p. 39). Finally, Lope Blanch (1987), again using data primarily from the 1970’s, found an overall frequency of 50% for [b] (p. 79). While all of these studies demonstrate a large amount of inter-speaker variation, comparing these frequencies of [b] with that of the present study confirms that the use of the stop variant is decreasing over time.

It is not clear that the frequencies in Figure 14 represent an actual peak in [b] in García Fajardo’s (1984) study\(^8\), more likely these frequencies are indicative of the

---

\(^8\) Interestingly, García Fajardo (1984) found more [b] among middle-aged speakers. These speakers constitute the same generation as the 50+ speakers in this dissertation.
idiosyncratic nature of [b] in Yucatan Spanish\textsuperscript{81}. Either way, it is clear that the data for the present study show much less [b] than previous studies. The hypothesis that [b] is receding in Yucatan Spanish is confirmed by apparent time data from this dissertation.

Figure 15: Frequencies of [b] in apparent time

Frequencies in both real time and apparent time show similar patterns; with the exception of a peak in García Fajardo’s (1984) data, the trend is a decreasing use of [b] in favor of the ‘standard’ [β] over time. In the apparent time data from this study, separate step-up/step down analyses found all of the age differences to be statistically significant.

\textsuperscript{81} Additionally, García Fajardo (1984) studied the variety of Yucatan Spanish spoken in the town of Valladolid, in the eastern part of the state. García Fajardo notes that Valladolid has had minimal external influence (p. 13), and as such is representative of yucateco speech (p. 12). Solomon (1999) likewise argues that the ‘typical’ variants of Yucatan Spanish are more common in Valladolid than in Mérida (pp. 137-138). The apparent peak for García Fajardo (1984) for this and other variables may be the result of data collected from a town characterized by ‘more Yucatecan’ linguistic features. It is not clear that data from the same time collected in Mérida would have shown the same peak.
significant\textsuperscript{82}. The decrease in use of [b] can be seen by superimposing the graphics for real and apparent time.

The data in Figures 14, 15 and 16 indicate that (b) does represent a change in progress in Yucatan Spanish; both real time and apparent time show a sharp decrease in [b] since the early 1980’s. The data clearly show that the largest change in frequency of [b] occurs in the middle age group; where the change occurs within that group is can be seen by charting the frequencies of [b] and ages for middle-aged speakers.

\textsuperscript{82} The possibility that the oldest age group correlates with more knowledge of Mayan was also explored. There are a total of 16 50+ speakers in the corpus; of these, 6 speak fluent Mayan, and 10 speak only Spanish. It is not surprising that among the oldest group there are no speakers with passive knowledge of Mayan; it is not until the middle-age group that children of Mayan speakers began improving their social standing. Thus the majority of the tokens for 50+ speakers come from monolingual Spanish-speakers (2837 tokens for monolingual Spanish vs. 1209 for bilingual speakers). The Mayan speakers, however, produced a higher frequency of [b] (49\% vs. 45\% for monolinguals). A step-up/step-down analysis using only the oldest speakers found a significant effect for language; speaking Mayan does correlate statistically with more use of [b] for these speakers. The factor of age remains the most important in determining use of [b], however. A cross-tabulation of age and language shows that use of [b] decreases across age for all groups regardless of language.
As Figure 17 demonstrates, the majority of the middle-aged speakers produce [b] between 30% and 50%. There are three outliers; two speakers produce 65% and 66% [b] respectively, and one speaker produces 17%. The fact that [b] defies easy categorization is seen in these three speakers. The two highest users of [b] are an upper class female with some knowledge of Mayan and a lower class male who speaks fluent Mayan. The lowest frequency speaker is a lower class female who speaks fluent Mayan. The precise locus of change is difficult to determine based on the data from middle aged speakers; with the three outliers removed, speakers over 40 years old show an almost identical frequency of [b] (42%) as those speakers under 40 (41%). The location of the change in progress, then, likely occurs somewhere at the intersection of the youngest and middle aged groups; young speakers, while also showing a wide range of individual variation, show a clear trend towards more use of [β]. Compare Figure 17 to the distribution of [b] for younger speakers.
While the individual speaker frequencies appear almost random, the trend between middle-aged and younger speakers is clear; while most middle-age speakers produce between 30%-50% [b], the majority of the younger speakers produce between 10% and 40%. While there is still a great deal of individual variation, only two of the 11 younger speakers exceed 45% [b], compared with six of the middle aged speakers. Still, the amount of individual variation makes it difficult to identify the location of the change.\footnote{Analyses of the other variables will show that the high frequency (69%) young speaker produces exceptionally high frequencies for all variables. This speaker patterns as an outlier across the board, and will be discussed further with regard to other variables.}

The data therefore confirm that while there is a great deal of variation among speakers in the use of [b], throughout the present corpus (b) represents a change in progress, as the local preference for [b] is replaced with the more standard fricative [\beta].

Figure 18: Correlation of age and [b] for younger speakers
The reasons for this standardization and the overall patterning of different variables in Yucatan Spanish is reserved for Chapter 6.

5.3.1 The variable (d)

Like the variable (b), previous studies have reported that Yucatan Spanish often fails to show the stop-fricative\textsuperscript{84} alternation for (d) characteristic of other varieties of Spanish. ‘Standard’ varieties of Spanish realize stop [d] in absolute initial position, and following nasal consonants and the alveolar lateral /l/. The [+cont] [ð] arises elsewhere (Barrutia & Schwegler 1994, p. 118). Again, the difference between the stop [d] and [+cont] [ð] is clearly visible through spectrographic analysis; the stop variant shows a period of (relative) silence\textsuperscript{85}, whereas the [+cont] variant blends with surrounding vocalic formants and does not show the gap characteristic of stops. Both of these variants are visible in the figures below that show tokens of (d) taken from the present corpus.

\textsuperscript{84} Again, the term ‘fricative’ should be taken to mean [+cont]. As for [b], most tokens of [+cont] [d] were approximants, rather than true fricatives.

\textsuperscript{85} Like for [b], some voicing noise will be apparent during the stop closure for [d] (Kent & Read 1992, pp. 122-123).
The present corpus consists of 15948 tokens of the variable (d). Since in Spanish /d/ neutralizes in absolute initial position and following nasals and /l/, those tokens were
removed from the data, leaving 12244 tokens of (d) that are included in this analysis. Below are the frequencies and percentages for (d).

<table>
<thead>
<tr>
<th>Variant</th>
<th>Tokens</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[d]</td>
<td>3875</td>
<td>32%</td>
</tr>
<tr>
<td>[ð]</td>
<td>8369</td>
<td>68%</td>
</tr>
<tr>
<td>Total</td>
<td>12244</td>
<td>100%</td>
</tr>
</tbody>
</table>

As Table 22 indicates, [d] accounts for approximately one third of the tokens of (d). As for (b), given that neutralizing contexts were removed from the analysis, the tokens of fricative [ð] can be considered ‘standard’, since most dialects of Spanish would prefer the fricative variant in all 12244 tokens. The next section will detail the linguistic factors that contribute to the production of [d].

### 5.3.2 [d]: linguistic factors

The analysis of the linguistic factors that may contribute to a stop production of (d) included: 1) the word class for each token (noun, adjective/adverb, verb, preposition, interrogative/complementizer); 2) the preceding segment (vowel or consonant); 3) the following segment (vowel, consonant, or Ø); and 4) whether the token was part of the –ado or –ido ending of a past participle\(^6\). The VARBRUL results for these linguistic factors are seen below.

\(^6\) (d) is particularly weak in this context across dialects (Dalbor 1980, p. 62).
As Table 23 demonstrates, there is a significant preference for [d] in verbs and adjectives/adverbs. Also, a preceding consonant significantly triggers [d]. Stop [d] is also more likely to arise when followed by a vowel or word finally. Finally, for the verbal tokens, [d] is significantly more likely to occur outside of a past participle ending.

Table 23: VARBRUL weights for linguistic factors conditioning [d]; significant result marked by *

<table>
<thead>
<tr>
<th>Factor group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Word class</td>
<td></td>
</tr>
<tr>
<td>Noun</td>
<td>0.466</td>
</tr>
<tr>
<td>Adjective/Adverb</td>
<td>0.507</td>
</tr>
<tr>
<td>Verb</td>
<td>0.575</td>
</tr>
<tr>
<td>Preposition</td>
<td>0.468</td>
</tr>
<tr>
<td>Interrogative/Complementizer</td>
<td>0.486</td>
</tr>
<tr>
<td>*Preceding segment</td>
<td></td>
</tr>
<tr>
<td>Vowel</td>
<td>0.485</td>
</tr>
<tr>
<td>Consonant</td>
<td>0.575</td>
</tr>
<tr>
<td>*Following segment</td>
<td></td>
</tr>
<tr>
<td>Vowel</td>
<td>0.503</td>
</tr>
<tr>
<td>Consonant</td>
<td>0.417</td>
</tr>
<tr>
<td>Ø (Word final)</td>
<td>0.528</td>
</tr>
<tr>
<td>*Past participle (calculated using verb tokens only)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>•</td>
</tr>
<tr>
<td>-ado</td>
<td>0.507</td>
</tr>
<tr>
<td>-ido</td>
<td>0.263</td>
</tr>
<tr>
<td></td>
<td>0.367</td>
</tr>
</tbody>
</table>

Chi-square per cell (excluding word class): 0.9835

As Table 23 demonstrates, there is a significant preference for [d] in verbs and adjectives/adverbs. Also, a preceding consonant significantly triggers [d]. Stop [d] is also more likely to arise when followed by a vowel or word finally. Finally, for the verbal tokens, [d] is significantly more likely to occur outside of a past participle ending.

---

87 It must be noted that the statistical model that includes word class had a higher error rate, chi-square per cell=2.7354. Further examination of the data showed the error rate increase was due to adjectives/adverbs in which the token of [d] occurred in C_V position; e.g. es difícil ‘it is difficult’. These contexts produced more cases of [d] (116) than expected (86.3). An investigation of the data did not make clear why this may be occurring.

88 Further investigation showed that the consonant that most triggered [d] is /r/ (0.647), followed by /s/ (0.554). This is the same pattern seen for [b] (cf. Table 12).

89 Word final [d] was occasionally devoiced; e.g. ‘verdad’ ‘truth’ [berdat]. When this occurred, it was also classified as a stop for the purposes of this study. The possible study of final devoicing will be reserved for future study.
in –ado or –ido (i.e. more prevalent in simple verbal forms such as yo digo ‘I say’ than in compound forms such as he hablado ‘I have spoken’). This is not unexpected, given that /d/ within the context of a past participle frequently weakens across dialects of Spanish (Dalbor 1980, p. 62).

5.3.3 [d]: social factors

As with the previous analyses, the determination of which, if any, social factors contribute to the production of [d] in Yucatan Spanish is undertaken using frequency data, VARBRUL analyses, cross-tabulations, and the comparison of [d] across real and apparent time. The social variables of gender, age, social class, and knowledge of Mayan were considered.

5.3.3.1 Frequencies of [d] by social group

First, the frequencies of [d] for each social variable provide a first view of how the stop variant patterns within the dialect. As the table below demonstrates, (d) demonstrates more variation within groups than did (b) (cf. Table 19).
Table 24: Frequencies of stop [d] by social factor group

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>37%</td>
</tr>
<tr>
<td>Male</td>
<td>25%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>19%</td>
</tr>
<tr>
<td>30-49</td>
<td>39%</td>
</tr>
<tr>
<td>50+</td>
<td>31%</td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
<tr>
<td>Lower (Middle)/Upper</td>
<td>33%</td>
</tr>
<tr>
<td>Fluential Mayan</td>
<td>37%</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>38%</td>
</tr>
<tr>
<td>Spanish Only</td>
<td>26%</td>
</tr>
</tbody>
</table>

As Table 24 shows, women in this corpus use 12% more [d] than men. Likewise, the factor of age also shows a frequency range of 12%; middle-aged speakers produce the most [d], followed by older speakers. The youngest speakers produce sharply less [d] than do their parents’ or grandparents’ generations; the difference between younger and middle-aged speakers is 20%. The frequencies for lower vs. (middle)/upper class speakers are similar, with a range of 3%. The frequencies suggest that lower class speakers produce [d] more frequently, although as the VARBRUL analysis and cross-tabulations will demonstrate, the role of class in this instance is not clear. Finally, those speakers that posses at least some knowledge of Mayan are more likely to produce tokens of stop [d]; the frequency range between monolingual Spanish-speakers and Mayan-speakers is 12%. The difference between the two Mayan-speaking groups is minimal, with a frequency difference of 1% between the two groups. In sum, the frequencies of [d] by social factor group indicate that gender, age, and language are the variables of most
importance to the production of [d]; social class does not appear to have a large effect across this pool of speakers.

5.3.3.2 VARBRUL analyses: [d]

An initial VARBRUL analysis with all social factor groups confirms the trends indicated by the frequencies by social group, with two exceptions; while the frequencies in Table 24 showed a slight tendency for lower class speakers to use more [d], the VARBRUL analysis indicates a strong effect for upper class speakers. Additionally, within the group age 50+ speakers are assigned a higher weight (0.547) than are middle-aged speakers (0.536), even though frequencies indicate that middle-aged speakers produce more [d].

Table 25: Complete VARBRUL run for [d]: social factors; significance indicated by *.

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.576</td>
</tr>
<tr>
<td>Male</td>
<td>0.425</td>
</tr>
<tr>
<td>*Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>0.355</td>
</tr>
<tr>
<td>30-49</td>
<td>0.536</td>
</tr>
<tr>
<td>50+</td>
<td>0.547</td>
</tr>
<tr>
<td>*Class</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>0.374</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
<td>0.552</td>
</tr>
<tr>
<td>*Language(s)</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>0.671</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>0.594</td>
</tr>
<tr>
<td>Spanish only</td>
<td>0.380</td>
</tr>
</tbody>
</table>

Chi-square per cell: 6.9801
Although the data patterned linearly, this VARBRUL run produced a high error rate, as indicated by the chi-square per cell. Further investigation indicated that the error rate was due primarily to two groups of speakers; 50+ upper class, monolingual Spanish men produced less [d] than predicted by the model (385 applications vs. 491 expected), while the women from the same group (50+ upper class, monolingual Spanish) produced more [d] than expected (774 applications vs. 649 predicted). The gender difference among the oldest, upper class, monolingual speakers is very strong; the men produced [d] 18% of the time, while the women preferred the stop variant in 42% of the tokens. This difference and the concomitant error rate in the VARBRUL run, combined with the discrepancies between the VARBRUL weights and the frequencies mentioned above indicate that the role of social factors in determining the production of [d] is extremely complex, and involves the interaction of several factors.

In order to investigate these complex interactions among social factors, a series of subsequent analyses and examinations of the data were undertaken. First, the discrepancy between VARBRUL weights and frequencies for middle-aged and older speakers was addressed. Recall that frequencies showed a higher rate of [d] among middle-aged speakers, while the VARBRUL analysis suggested a stronger correlation for older speakers. A step-up/step down analysis was performed on the data for these two groups, and the difference between middle-aged and older speakers was not selected as significant; thus statistically these two groups behave identically. Next, the differences in

---

90 A subsequent analysis with only the younger and middle aged speakers and the factors gender, age, and language produced a much lower error rate (chi-square per cell = 1.2998); class was excluded due to the problematic behavior of class discussed in this section. The factor rankings were identical to those in Table 20.
rankings for *class* and the error rates for the two oldest, upper-class, monolingual groups were examined. A series of combined-factor groups were submitted to VARBRUL analysis. Although the subsequent analyses produced high error rates as well, they do indicate some interesting trends in the data. First, collapsing the factors *age* and *class* indicated that it is upper class middle-aged speakers (0.576) and older speakers (0.612) that correlate positively with the production of [d]. As previously discussed, the high correlation with older upper class speakers is due primarily to the women of that group, who produce [d] in 42% of the tokens. This is confirmed by a collapsed-factor analysis with *gender* and *class*; upper class women were the only group within the combined factor to be selected as correlating with [d] (0.648). Collapsing the factors of *class* and *language* shows that lower class fluent Mayan-speakers (0.551), upper class speakers with some knowledge of Mayan (0.646) and the one upper class fluent Mayan speaker (0.701) all correlate with the production of [d]. A final collapsed factor analysis combining gender-age and class-language confirmed these results and obtained a better model fit (chi-square per cell = 2.5115). These analyses suggest that it is primarily upper class women with some knowledge of Mayan that produce the most ‘non-standard’ [d]. This trend can be seen by charting the speaker groups by percentage of [d].

---

91 Recall from previous analyses that the group ‘upper class fluent Mayan-speakers’ consists of only one speaker. Again, the existence of a college-educated fluent Mayan-speaker is at present anomalous, and an analysis based on only one speaker who produces 47% [d] skews the data toward showing that, as a group, upper class speakers produce more [d] than they actually do. This is addressed in the discussion of Figure 19.
The chart in Figure 21 indicates some interesting trends. Of the five groups with the lowest percentage of [d], four of them are monolingual Spanish, four are (middle)/upper class, three are ages 19-29, and four are male. This confirms the VARBRUL weights for gender (men = 0.425), age (youngest speakers = 0.355), and language (monolingual Spanish = 0.380). Examining the five groups with the highest percentage of [d] indicates the opposite trend\textsuperscript{92}: four of them speak at least some Mayan, all five are middle-aged or older, and four are female. Interestingly, three of the groups are (middle)/upper class, compared with four groups for the lowest [d] speakers. Again, this data confirms the VARBRUL weights for gender (women = 0.576), age (middle-

\textsuperscript{92} The second highest group, speaker group MMU2 (male middle-aged (middle)/upper class fluent Mayan speaker) was not counted in the discussion of Figure 21; recall that data for this group is based on one speaker who is not indicative of wider trends in Yucatan. Leaving that speaker’s data aside for the present discussion gives a more realistic picture of actual trends in the corpus.
aged speakers = 0.536; oldest speakers = 0.547), and language (some knowledge of Mayan = 0.594; fluent Mayan = 0.671). As for class, (middle)/upper class speakers produce both the most and the least [d] in the present corpus. A cross-tabulation of age and class shows that lower class speakers produce more [d] for both the youngest (22% lower vs. 19% upper) and oldest groups (38% lower vs. 29% upper). For middle aged speakers, upper class shows more [d] (41% for upper vs. 37% lower). This also helps explain the discrepancy between frequencies and VARBRUL weights; the trend is for lower class speakers to do it more frequently, but the highest percentage of [d] occurs among the upper class. This paradox again suggests that class is not a reliable factor for these speakers.

This fact combined with the close frequencies of [d] between classes suggests that social class, as implemented in this study, is not a strong predictor of [d] production. Cross-tabulations, found in the following section, will allow for a closer look at how the important social variables of gender, age, and language interact with respect to [d] in Yucatan Spanish.

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93 That is not to say that a study that implements a more fine-grained notion of class will not find a strong effect. Rather for the speakers in this study class is not a good predictor of speech behavior with regards to [d]. Recall that while VARBRUL indicated a strong effect for class, the two groups that produced high error rates were older, upper class speakers. An additional factor may be the higher number of tokens for (middle)/upper class speakers (8691) compared with lower class speakers (3553). The combination of frequencies and VARBRUL analysis, however, do show that the other factors (gender, age, and language) are reliable predictors of [d] production.
5.3.3.3 Cross-tabulations for (d)

First, examining the interaction of gender and age demonstrates that, as expected, women use more [d] than men across all age groups. The frequencies, however, vary greatly across ages.

Table 26: Cross-tabulation: gender and age for (d)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19-29</td>
<td>25%</td>
<td>75%</td>
<td>18%</td>
<td>82%</td>
</tr>
<tr>
<td>30-49</td>
<td>41%</td>
<td>59%</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>50+</td>
<td>42%</td>
<td>58%</td>
<td>22%</td>
<td>78%</td>
</tr>
</tbody>
</table>

The percentages in Table 26 show some interesting trends in the data. First, as noted previously, women use more [d] than men across all age groups. Second, middle aged speakers use similar frequencies of [d] (41% vs. 38%) across genders. Women also use almost identical frequencies of [d] across the two oldest age groups (30-49 = 41%; 50+ = 42%). Finally, the oldest men in the corpus use [d] at a frequency (22%) similar to that of the youngest speakers of both genders (22% and 18%). Thus women realize a
level pattern of [d] over at least two generations before the rate of [d] falls sharply among
the youngest speakers. Men, on the other hand, demonstrate much more variability, with
a peak frequency of [d] among middle-aged speakers. This observation also helps to
resolve the age discrepancy seen previously; the observed spike in frequency of [d] for
middle-aged speakers is due primarily to the male speakers. Charting the values across
ages by gender makes this difference clear.

Figure 22: Percent [d] across ages by gender

While younger speakers of both genders behave in very similar ways by
‘standardizing’ their speech with regards to (d), 50+ men and women behave in very
different ways, with the older men producing much less [d] than older women. A step-
up/step down analysis with only the tokens for 50+ speakers found this difference to be
statistically significant\textsuperscript{94}. The question, then, is why do the oldest male speakers behave so differently from women of the same generation? This pattern is particular to (d); analyses of the other variables in this study have shown that men and women behave in similar ways across age for [m], [b] and [g], following the same tendencies of increasing or decreasing across ages\textsuperscript{95}. One possible explanation is that [d] was a change led by women, who had more contact with the Mayan-influenced Spanish of household workers and domestic servants. The use of stop [d] then diffused throughout the speech community, with men lagging a generation behind (cf. Labov 2001, pp. 307-308\textsuperscript{96}). It is among the middle aged speakers of this study that men approached the frequency of women for [d]. This change was halted and reversed, however, by increasing standardization through education and contact with speakers of Spanish from outside the Yucatan\textsuperscript{97}, as seen in the sharp decline between middle aged and younger speakers. While this is a plausible explanation for the pattern seen in Figure 22, this hypothesis is unverifiable from the present data alone.

\textsuperscript{94} Gender and language were both selected as significant for the oldest speakers. Class was not significant.

\textsuperscript{95} For [m]: 19-29 (F: 32%, M: 22%), 30-49 (F: 40%, M: 33%), 50+ (F: 17%, M: 14%); For [b]: 19-29 (F: 32%, M: 29%), 30-49 (F: 45%, M: 45%), 50+ (F: 50%, M: 43%); For [g]: 19-29 (F: 9%, M: 15%), 30-49: (F: 36%, M: 30%), 50+ (F: 40%, M: 28%).

\textsuperscript{96} This possibility is further developed in Chapter 6.

\textsuperscript{97} This possibility will be contrasted with [m] in Chapter 6; unlike the labialization of a final nasal consonant, the stop-fricative alternation in Spanish is non-salient, and lies below the level of consciousness for most (if not all) speakers (Dalbor 1980, p. 36). Since speakers for the most part are not aware of their use of [d] and [\textsuperscript{A}], this variable is not subject to conscious adoption or deletion on the part of speakers. Rather, the pattern seen here for [d] may be the result of increased contact with Mayan-influenced Spanish at an earlier point in time, followed by an increased standardization among the youngest speakers as a result of increased education and contact with monolingual varieties of Spanish.
5.3.3.4 (d) as language change in progress?

It is clear from the previous discussion that [d] represents a decreasing percentage of the tokens of (d) in Yucatan Spanish.

Real time data demonstrates a general decrease in the frequency of [d] over the last 40 years. Alvar (1969) reported 100% [d] in nine of his ten speakers. Lope Blanch (1983/1987) found 40% [d], and García Fajardo reported an average of 74%\textsuperscript{98}. The present study’s overall frequency of 31% indicates that the use of [d] has decreased in real time, as seen in the following chart.

![Figure 23: Frequencies of [d] in real time.](image)

\textsuperscript{98} In intervocalic position (García Fajardo 1984, p. 40). Again, recall from the discussion of [b] that the apparent increase in frequency for García Fajardo’s data may be due, in part, to the higher rates of ‘typical’ Yucatan variants in Valladolid as compared to Mérida, where the majority of the present data (as well as Yager 1982) was collected.
Apparent time data from the present study confirms the same pattern. As mentioned previously, middle aged speakers produce the most [d]; as discussed in the previous section, this is due primarily to the spike in [d] for male speakers. There is however a sharp decline in frequency for [d] among the youngest speakers.

A step-up/step down analysis for the younger and middle aged speakers found the age difference to be significant; younger speakers are significantly less likely to produce tokens of [d]. Superimposing the charts for real and apparent time shows the correlation between the two data sets.

Figure 24: Frequencies of [d] in apparent time
The data from both real and apparent time indicate that (d) does represent a case of linguistic change in progress; there is a sharp decline in the frequency of [d] over the last 20 years. The change, then, occurs within the middle age group. Where that change occurs within that group can be seen by charting the frequencies of [d] for middle aged speakers.
As Figure 26 demonstrates, with the exception of one outlier whose use of [d] peaks at 69%, the majority of the middle aged speakers in this study produce between 30% and 50% [d]. The 39 year old outlier that produces 69% [d] is a (middle)/upper class female that speaks some Mayan. Removing the highest (69%) and lowest (24%) frequencies produces a relatively consistent use of [d] across the middle age group, albeit with a large amount of individual variation. Comparing speakers over 40 and speakers under 40 shows that both subgroups behave in an almost identical fashion; over 40 speakers average 39%; those under 40 average 38%. For these speakers, then, the locus of change within the middle aged group is impossible to determine. A similar analysis for the youngest speakers may help determine where (and therefore when) the observed language change is taking place.

![Figure 26: Correlation of age and [d] for middle-aged speakers](image)
The youngest speakers in Figure 27 also show a great deal of individual variation, with frequencies of [d] ranging from 9% to 38%. The majority of the speakers, however, lie between 10% and 25% [d], significantly less than middle aged speakers. Still, given the individual speaker variation evidenced within groups, it is difficult to determine where the change in [d] is taking place. Charting the combined data for younger and middle aged speakers, however, does indicate where the sharp downward trend evident between these two age groups begins.
As seen in Figure 28, the frequency of [d] declines sharply between the ages of 34 and 25. No speaker under the age of 34 reaches 40% [d], and seven out of ten speakers under 25 produce frequencies of [d] below 20%. It therefore appears that the change in progress for [d] occurs primarily between the ages of 34 and 25; that is in the youngest part of the middle aged speakers and the older half of the youngest speakers.

5.4.1 The variable (g)

As for the other voiced stops (b) and (d), the variable (g) in Yucatan Spanish does not always demonstrate the stop-fricative\(^{99}\) alternation characteristic of other varieties of Spanish. Most varieties of Spanish prefer stop [g] in absolute initial position, and following nasal consonants. The [+cont] [ɣ] occurs elsewhere (Barrutia & Schwegler

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\(^{99}\) As for the other voiced stops, ‘fricative’ is used here as a blanket term for [+cont] segments. Most tokens of [+cont] [g] in this corpus are approximates.
As for the other voiced stop variables, the difference between the stop [g] and [+cont] [ɣ] is clearly seen in a spectrographic analysis; the stop variant is characterized by a period of silence, while the [+cont] variant maintains the surrounding vocalic formants without the gap indicative of stops. Both of these variants are visible in the figures below.

Figure 29: Stop [g]: spectrogram for *pagarle* ‘to pay him’ spoken by an upper-class female informant. Arrows mark the beginning and end of the stop.
Of the three voiced stops in Spanish, /g/ is by far the least frequent. The present corpus consists of 3616 tokens of the variable (g)\(^{100}\). As for the other stop variables (b) and (d), Spanish neutralizes /g/ in absolute initial position and following nasal consonants; therefore neutralized tokens were excluded from the data set, leaving 2978 tokens of (g) that are included in the analysis. The following table indicates the frequencies and percentages for (g).

\(^{100}\) Compare this number with 8809 tokens of (b) and 12244 tokens of (d). This trend holds across Spanish. Navarro Tomás (1968) found that the phoneme /b/ has a frequency of 2.54%, /d/ a frequency of 5%, and /g/ 1.04%. These proportions are very similar to those found in this study.
As demonstrated in Table 27, less than one third of the tokens of (g) were produced as stop [g]. Again, the tokens of fricative [ɣ] can be considered ‘standard’, given that most varieties of Spanish would prefer this variant in all 2978 tokens. The next section will detail the linguistic factors that contribute to the production of [g] for these speakers of Yucatan Spanish.

### 5.4.2 [g]: linguistic factors

As for the other voiced stops, the analysis of the linguistic factors that may contribute to a stop production of (g) included: 1) the word class for each token (noun, adjective/adverb, verb, preposition); 2) the preceding segment (vowel or consonant); and 3) the following segment (vowel, consonant, or Ø). The VARBRUL results for these linguistic factors are seen below.

<table>
<thead>
<tr>
<th>Variant</th>
<th>Tokens</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[g]</td>
<td>840</td>
<td>28%</td>
</tr>
<tr>
<td>[ɣ]</td>
<td>2138</td>
<td>72%</td>
</tr>
<tr>
<td>Total</td>
<td>2978</td>
<td>100%</td>
</tr>
</tbody>
</table>
As Table 28 indicates, the VARBRUL step-up/step-down analysis selected both preceding and following segments as significant contributors to the production of [g]. The differences for word class are not significant. The phonetic context, however, does significantly affect the production of [g]. As with the other voiced stops (cf. Table 16 and Table 23), a preceding consonant correlates with stop [g]. Likewise, when (g) is followed by a consonant or occurs in word final position it is significantly more likely to surface as [g].

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101 Further analysis showed the same trends as for (b) and (d). The preceding consonants show the following VARBRUL weights (Chi-square per cell = 1.2155): /r/ (0.734) > /s/ (0.610) > /l/ (0.535).

102 /g/ occurs only rarely in word final position in Spanish. In the present corpus, only two tokens occur word finally; both are the borrowed word *esmog* ‘smog’. Removal of these tokens did not affect the analysis; following segment was still selected as significant.
### 5.4.3 [g]: social factors

As with the other variables in this study, this section will detail frequency data, VARBRUL analyses, cross-tabulations, and data from real time and apparent time with the goals of understanding how [g] patterns for these speakers of Yucatan Spanish and to determine if [g] represents a case of linguistic change in progress. The social variables considered are gender, age, social class, and knowledge of Mayan.

### 5.4.4 Frequencies of [g] by social group

The discussion of the role of social factors in determining the production of [g] begins with an examination of the frequencies of the two variants of (g), [g] and [ɣ], for each social group. The frequencies are listed in the table below.

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female 30%</td>
</tr>
<tr>
<td></td>
<td>Male 25%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>12%</td>
</tr>
<tr>
<td>30-49</td>
<td>33%</td>
</tr>
<tr>
<td>50+</td>
<td>33%</td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>30%</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
<td>27%</td>
</tr>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>34%</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>28%</td>
</tr>
<tr>
<td>Spanish Only</td>
<td>25%</td>
</tr>
</tbody>
</table>
As Table 29 demonstrates, [g] follows the same basic pattern as [b] and [d]; first, women use more [g] than men (30% vs. 25% respectively). The discussion of cross-tabulations later in this section will show that, with one exception (the youngest speakers), this trend holds for speakers of all ages, classes, and language proficiencies. With regards to age, middle-aged and older speakers produce identical frequencies of [g] (33%), while younger speakers produce significantly less (12%). Lower class speakers use slightly more [g] than do (middle)/upper class speakers (30% vs. 27%)\(^{103}\). Additionally, a higher frequency of [g] correlates with more knowledge of Mayan; fluent Mayan speakers produce more [g] (34%) than do speakers with some knowledge of Mayan (28%). Both of these groups produce more of the stop variant than do monolingual Spanish speakers (25%). All of these frequencies give the initial indication that age is the overriding factor in determining the choice of variant for (g); the overall range of frequencies between younger and middle aged/older speakers is 21%, compared with 5% for gender, 3% for class, and 9% for language. Social class, in particular, does not appear to play an important role in the production of [g], as will be demonstrated in the following discussion.

\(^{103}\) As with [d], the frequencies and the VARBRUL analysis for class for [g] do not agree; frequencies suggest more lower class use, while VARBRUL weights indicate more use among (middle)/upper class speakers. It will again be argued that this fact, combined with the failure of class to produce significant results in an accepted ‘good fit’ step-up/step-down analysis, indicates that class as it is implemented in this study is not an important factor in the production of [g].
5.4.5 VARBRUL analyses: [g]

An initial VARBRUL analysis with all social factors confirmed the trends from the frequencies seen in the previous section for three of the four social variables. Recall that the frequencies showed a slight preference for [g] among lower class speakers (30%) compared to (middle)/upper class speakers (27%). The VARBRUL weights, however, indicate the opposite trend for class.

Table 30: Initial VARBRUL run for [g]: social factors; significance indicated by *

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.539</td>
</tr>
<tr>
<td>Male</td>
<td>0.462</td>
</tr>
<tr>
<td>*Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>0.276</td>
</tr>
<tr>
<td>30-49</td>
<td>0.542</td>
</tr>
<tr>
<td>50+</td>
<td>0.605</td>
</tr>
<tr>
<td>*Class</td>
<td></td>
</tr>
<tr>
<td>Lower (Middle)/Upper</td>
<td>0.373</td>
</tr>
<tr>
<td></td>
<td>0.556</td>
</tr>
<tr>
<td>*Language(s)</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>0.677</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>0.545</td>
</tr>
<tr>
<td>Spanish only</td>
<td>0.398</td>
</tr>
</tbody>
</table>

Chi-square per cell: 3.9331

Importantly, the error rate caused the model to not obtain a good fit, as indicated by the chi-square per cell (3.9331). Further investigation revealed that the error rate was due to two speakers. Speaker 201 is a young, (middle)/upper class male with passive knowledge of Mayan. This speaker produced much more [g] than predicted by the model, reaching a frequency of 35% [g], compared with an average of 12% for all young speakers. The other speaker, 103, has also patterned as an outlier in the analyses of other variables. This
speaker is a middle-aged, (middle)/upper class male, also with some knowledge of Mayan. He produced [g] with a frequency of 44%, compared to an average of 33% for other speakers in his age group. Speaker 201 produced substantially more stop variants for all three voiced stop variables than his peers (69% [b] and 35% [d], cf. Figure 18 and Figure 27; speaker 201 is the 20 year old represented by the large spike in frequency in each of these charts). Speaker 103, on the other hand, produces a more complex pattern. For [b], he produced less of the stop variant (36%) than the average for his age group (44%). For [d], however, he produced more stops (46%) than average (39%). Likewise this speaker produced substantially more [g] than the rest of his peers (44% vs. 33%). For [g], these two speakers do not pattern with their peers; these speakers are outliers with respect to all four social variables\textsuperscript{104}. Once these two speakers were removed from analysis, the resulting VARBRUL model obtained an acceptable fit.

\textsuperscript{104} Recall that men produced an average of 25% [g], (middle)/upper class speakers averaged 27%, and speakers with some knowledge of Mayan produced on average 28% [g].
Table 31: Second VARBRUL run for [g]: speakers 103M and 201M excluded; significance indicated by *

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.432</td>
</tr>
<tr>
<td>Female</td>
<td>0.560</td>
</tr>
<tr>
<td>*Age</td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>0.216</td>
</tr>
<tr>
<td>30-49</td>
<td>0.575</td>
</tr>
<tr>
<td>50+</td>
<td>0.607</td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
<tr>
<td>Lower (Middle)/Upper</td>
<td>0.457</td>
</tr>
<tr>
<td></td>
<td>0.520</td>
</tr>
<tr>
<td>*Language(s)</td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>0.623</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>0.444</td>
</tr>
<tr>
<td>Spanish only</td>
<td>0.456</td>
</tr>
</tbody>
</table>

Chi-square per cell: 2.0608

A comparison of the two VARBRUL runs for [g] in Table 30 and Table 31 shows the same rankings and significance for gender and age, with or without the data from the two outliers. The removal of two upper class speakers that produce high frequencies of [g] caused the variable class to no longer be selected as significant. Given the removed speakers’ status as outliers, this result is more indicative of the role of class in [g] production. Likewise, the removal of these two high-frequency [g] speakers that have some knowledge of Mayan caused the factor weight for the corresponding section of language to drop. Clearly, although neither one of these runs represents a perfect statistical model of the data (one has a high error rate due to outliers, the other excludes data from 2 speakers), comparing the two models does provide a good picture of how [g] patterns with regards to social factors for these speakers of Yucatan Spanish. An additional collapsed factors analysis with all speakers combining gender-age and class-language confirmed the results above, and produced a better model fit (chi-square per cell
Frequencies and the VARBRUL analyses are in agreement that women produce more [g], as do speakers over the age of 30. Likewise, speaking fluent Mayan corresponds with more use of [g]. The factor weights for class seem to rest on the two outliers. This, combined with the discrepancy between frequency data and VARBRUL weights indicates that class is not an important factor in this corpus. Additionally, further analysis revealed that speaker 201M is responsible for the positive correlation between [g] and some knowledge of Mayan. Thus this factor should not be considered a reliable predictor of [g] for these speakers of Yucatan Spanish. That is, unlike [b] and [d], the stop variant of [g] seems to be primarily a characteristic of fluent bilingual speech. The examination of cross-tabulations in the next section will further explain the role of social factors in the production of [g].

5.4.6 Cross-tabulations for (g)

While it appears clear that (g) is undergoing change resulting in standardization in Yucatan Spanish, details of how that change is coming about can be seen in the following cross-tabulations. First, the comparison of gender and age reveals an interesting pattern.

\footnotesize
\begin{itemize}
\item VARBRUL runs that include this speaker’s data indicate a positive correlation between some knowledge of Mayan and [g]; in the attempt to identify the outliers responsible for the error rate in the first analysis it was discovered that removing only speaker 201M’s data caused the factor weight for this social factor to drop to below 0.5.
\item This will be discussed further in the next section.
\end{itemize}
Table 32: Cross-tabulation of gender and age: [g]

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-29 [g]:</td>
<td>9%</td>
<td>15%</td>
</tr>
<tr>
<td>[r]:</td>
<td>91%</td>
<td>85%</td>
</tr>
<tr>
<td>30-49 [g]:</td>
<td>36%</td>
<td>30%</td>
</tr>
<tr>
<td>[r]:</td>
<td>64%</td>
<td>70%</td>
</tr>
<tr>
<td>50+ [g]:</td>
<td>40%</td>
<td>28%</td>
</tr>
<tr>
<td>[r]:</td>
<td>60%</td>
<td>72%</td>
</tr>
</tbody>
</table>

Table 32 shows a gender discrepancy across age groups. Women show a consistent decrease in the use [g] from older to younger. Men also show a general decrease from older to younger (given that the frequencies for the two oldest groups of men are very similar they will be treated as stable for this discussion\(^{107}\)). Older and middle aged women both use more [g] than men of the same age. By the youngest age group, however, female speakers have overtaken men in their standardization of (g); young women produce 6% less [g] than young men. This trend indicates that as the use of stop [g] loses ground to the fricative [r], women are more attuned to the linguistic change

\(^{107}\) A separate step-up/step down analysis with only middle aged and older men found this difference in age to not be significant.
than are men. Women began reducing their use of [g] two generations before men; men have been slower to adopt the new standardized variant. This behavior is consistent with what Labov calls the gender paradox (2001, p. 293). Women are more attuned to linguistic norms than men, and in changes that occur below the level of social consciousness they are generally leaders in that change. This trend is confirmed by the patterning of [g] for these speakers of Yucatan Spanish.

Although previous discussions have demonstrated that class is overall not a significant factor with regards to [g], the examination of this factor with regards to age and language show interesting patterns important to understanding the use of [g] in Yucatan Spanish. Frequencies from the cross-tabulation of age and class show that among the oldest speakers, lower class subjects use more [g] (42%) than do those of the (middle)/upper class (31%). Among middle aged and younger subjects, however, (middle)/upper class speakers produce more [g] (youngest speakers: 13% upper vs. 11% lower; middle aged speakers: 35% upper vs. 31% lower). As for the other stop variables, this suggests that the class discrepancy is due in large part to the movement of the children and grandchildren of lower class speakers into the economic mainstream. Given that, at least until the last 20 years, speaking Mayan correlated strongly with being lower class in Yucatan society, it is not surprising that for older speakers that grew up in a highly stratified society, it was primarily the lower classes that manifested traits of

108 It will be argued in chapter 6 that the stop/fricative alternation is below the level of consciousness for most Spanish-speakers; they are not aware of the different articulations (cf. Dalbor 1980 p. 36).
109 Surprisingly, a step-up/step-down analysis did not find this 11% difference to be significant. This is likely indicative of the problematic nature of class as implemented in this study.
110 Both of these differences were selected as significant.
bilingual (in this case Mayan-influenced) Spanish. Many middle or upper class speakers under the age of 50, however, grew up in poorer, Mayan-speaking households and have therefore carried their linguistic heritage with them as they climbed the social ladder in Yucatan society. The cross-tabulation of class and language confirms this observation; among (middle)/upper class speakers, those that speak some Mayan are more likely to produce [g] (35%) than monolingual Spanish-speakers (25%). A step-up/step-down analysis confirms that this difference is significant. (Middle)/upper class Mayan speakers necessarily came from lower class families; given that in the present corpus speakers 50 years or older speak either fluent Mayan (and are therefore lower class) or monolingual Spanish (upper class)\(^{111}\), it is clear that Mayan-speakers (and their children) have only begun to enter the middle and upper classes within approximately the last 20 years. These (now middle aged) speakers necessarily carried their Mayan-influenced Spanish into their newly obtained social class. Their children (the youngest group), through exposure to more education with monolingual Spanish-speakers, the standardizing forces of the media, and increased dialect mixing through immigration from other parts of Mexico, are demonstrating a trend toward standardization of (g)\(^{112}\). These speakers are also more likely to be Spanish-dominant. That (g) represents a linguistic change in progress is confirmed in the next section.

\(^{111}\) In other words, there are no older speakers with passive knowledge of Mayan in the corpus. This trend likely holds with few exceptions across Yucatan society.

\(^{112}\) This argument will be expanded in Chapter 6.
5.4.7 (g) as language change in progress?

The examination of data on [g] in both real and apparent time confirms the trends seen in the frequencies and the VARBRUL analyses above; the stop variant [g] is losing ground to the variant preferred in most dialects of monolingual Spanish, [ɣ]. First, a comparison of real time data from this and previous studies shows a decline in frequency of [g].

![Graph showing frequency of [g] over decades](Image)

Figure 31: Frequencies of [g] in real time.

As seen in Figure 31, the frequency of [g] has decreased over the past 30 years, although this overall decrease is not as dramatic as for the other stop variants (cf. Figure 14 and Figure 23). Again, García Fajardo’s (1984) data shows a peak in frequency. As discussed previously, this is likely due to the large range of individual variation, as well as the location of that study in Valladolid, a town in which ‘typical’ Yucatan variants may be more widespread than in Mérida. Assuming a mid point
between the data from the 1970’s and the 1980’s (approximately 33%), Figure 31 shows an approximate decrease of 5% in the frequency of [g]. The rate of change in apparent time is more dramatic.

![Graph showing frequency of [g] over age groups](image)

**Figure 32: Frequencies of [g] in apparent time.**

Here, the sharp decline in frequency of [g] between the youngest and middle aged groups is clear; the overall difference in frequency is of 21%. In spite of some differences, that real time and apparent time both point to change in progress can be seen by superimposing both sets of data.
The coincidence between real and apparent time is not perfect, given that the youngest speakers in apparent time realize a sharp decline for [g], whereas the real time data represents an average based on all age groups. Still, based on all of the data available, it is safe to conclude that (g) is undergoing change in Yucatan Spanish. This change has its locus somewhere among middle aged or younger speakers. As with the other stop variables, an examination of the frequencies of [g] by age will help determine where this change is taking place. First, the data for middle aged speakers shows an almost random pattern.

Figure 33: Correlation of real and apparent time for [g]
The majority of middle aged speakers produce between 21% and 35% [g]. There is, however, no easily discernible pattern for these speakers. This large range of variation for middle aged speakers (from 11% to 62% [g]) is likely indicative of the instability of the variable inherent in cases of language change. Younger speakers, however, show a much more consistent pattern (with one exception, the outlier speaker 201M discussed previously).
Among the youngest speakers, Figure 35 indicates that the change has, for the most part, stabilized. This is not to say, of course, that (g) will not continue to change in the future; rather there is much less inter-speaker variability among younger speakers than among middle aged speakers. With the exception of the previously identified outlier speaker 201 (35% [g]), no other speaker exceeds a frequency of 20%, and seven out of 11 speakers do not exceed 10% [g]. Combining the data for younger and middle aged speakers shows the sharp change in frequency between the two groups.
Figure 36 indicates that the sharpest overall drop in frequency of [g] occurs among speakers in their early 30’s. Before the age of 31, no speaker (with the exception of the aforementioned outlier) reaches a frequency of 20%; after the age of 31, only one speaker (an outlier at 11%) drops below 20% [g]. The locus of change, therefore, is found among the youngest of the middle aged speakers; that is, speakers born in the 1970’s and primarily schooled in the 1980’s\textsuperscript{113}.

5.5 Voiceless stop (k) pilot data

Early studies of Yucatan Spanish indicated that the aspiration of voiceless stops was one of the more salient features of the dialect (Nykl 1938, Suarez 1945/1979). Later studies, however, make less mention of aspiration, and instead concentrate on the final

\textsuperscript{113} The importance of this observation will be addressed in Chapter 6.
nasals and voiced stops already discussed in this dissertation. Alvar (1969), for example, found sporadic aspiration of (k), and almost no cases of aspirated (p) or (t) (p. 177). Likewise, Yager (1982) found the same pattern of more aspiration of (k) occurring primarily in emphatic speech (pp. 48-50). García Fajardo (1984) again found the most aspiration with (k), and primarily among lower and upper class speakers (pp. 88-89). The fact that later studies place less emphasis on aspirated voiceless stops as markers of Yucatan Spanish, combined with initial impressions of the present data suggesting that aspiration is fairly infrequent, indicates a sharp decrease in aspiration from that found in earlier studies. In order to confirm this impression, a pilot analysis was conducted with data from six speakers in the present study. One female and one male speaker from each of the three age groups were randomly selected for analysis. The speakers selected consist of four (middle)/upper class and two lower class speakers. Three of the subjects are monolingual Spanish-speakers, and three speak at least some Mayan. Based on previous reports, the pilot analysis was limited to (k), given that it is with this variant that the highest rates of aspiration can be expected. This analysis, then, would indicate whether further analysis of (p t k) is warranted.

Acoustically, aspiration is visible as a burst of energy followed by breath noise before the onset of vocalic formant structure (Kent & Read 1992, pp. 106-107). Importantly, both aspirated and unaspirated stops will show some amount of aspiration; the distinction is in the amount of aspiration (i.e. the length of the VOT). For example, monolingual varieties of Spanish, such as that spoken in Puerto Rico, show VOT values

---

114 This observation has an acoustic basis. Velar consonants are identified by a late onset of voicing, and therefore by longer VOT values, indicating more aspiration (Kent & Read 1992, p. 114).
for [k] of approximately 29 ms (Lisker & Abramson 1964). This is considered an unaspirated stop. English [kʰ], on the other hand, shows VOT values of approximately 80 ms (Lisker & Abramson 1964). The following spectrograms made from speakers in the pilot study make clear the difference between aspirated and unaspirated (k) in Yucatan Spanish.

Figure 37: Aspirated [kʰ]: spectrogram for cases ‘that you get married’ spoken by an upper-class female informant. The vertical dotted lines and highlighting mark the aspiration, \( VOT = 45 \) ms.

Note that the \( VOT \) value in Figure 37 is 45 ms, a value substantially higher than the norm for most dialects of Spanish (approximately 29 ms). The aspiration is still not as strong, however, as that found in English aspirated stops (80 ms). Compare this figure with the unaspirated stop below.
The token of (k) in Figure 38 shows a \( VOT \) much more like that of most varieties of Spanish. Next, for the purposes of comparison, Figure 39 shows an aspirated [k\textsuperscript{h}] from English, spoken by the author. While the \( VOT \) for Yucatan Spanish aspirated [k\textsuperscript{h}] is twice as long as the unaspirated stops characteristic of other varieties of Spanish, aspiration in the dialect is not nearly as strong as in English.
The overall frequencies of (k) confirm that aspiration is infrequent for these speakers. Of a total of 2626 tokens of (k) produced by the six speakers in this pilot, 200 of the tokens were aspirated. The frequencies and percentages for each variant of (k) are seen in the following table.

Table 33: Frequencies and percentages for (k): pilot data

<table>
<thead>
<tr>
<th>Variant</th>
<th>Tokens</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[kʰ]</td>
<td>200</td>
<td>8%</td>
</tr>
<tr>
<td>[k]</td>
<td>2426</td>
<td>92%</td>
</tr>
<tr>
<td>Total</td>
<td>2626</td>
<td>100%</td>
</tr>
</tbody>
</table>
Aspirated \([k^h]\) accounted for only 8% of the tokens in the pilot. Based on previous reports that (k) is the most frequently aspirated of the voiceless stops, it can be assumed that \([p^h]\) and \([t^h]\) occur at frequencies less than 8%. With regard to linguistic factors, \([k^h]\) occurred most frequently before /a/ (24% stressed [a], 12% unstressed [a], for a total frequency of 36%). Aspiration was also slightly more likely to occur in word initial position (8% initial vs. 6% internal).

An analysis of the social factors related to \([k^h]\) indicate that aspiration does demonstrate sociolinguistic variation, with age as the primary factor. This is clear from the frequencies in the table below.

<table>
<thead>
<tr>
<th>Table 34: Frequencies of ([k^h]) by social group: pilot data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor Group</strong></td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>19-29</td>
</tr>
<tr>
<td>30-49</td>
</tr>
<tr>
<td>50+</td>
</tr>
<tr>
<td>Class</td>
</tr>
<tr>
<td>Lower (Middle)/Upper</td>
</tr>
<tr>
<td>(Middle)/Upper</td>
</tr>
<tr>
<td>Language</td>
</tr>
<tr>
<td>Fluent Mayan</td>
</tr>
<tr>
<td>Some Mayan</td>
</tr>
<tr>
<td>Spanish Only</td>
</tr>
</tbody>
</table>

Recall that the six speakers in the pilot analysis were balanced for gender and age; the frequencies for these two factors are reliable indicators of how the data is likely to pattern throughout the corpus. Class and language, on the other hand, may be skewed by the imbalance of speakers in such a small subject pool. The frequencies in Table 34 make
it clear that age is the primary factor in determining the aspiration of (k). Speakers over
50+ are twice as likely to aspirate as those of the middle or younger groups. A
VARBRUL analysis confirms the pattern indicated by the frequencies\textsuperscript{115}.

A step-up/step-down analysis found that only age and language were significant
factors. As mentioned previously, language was not balanced for in this pilot analysis.
The difference in aspiration based on age, however, is indicative of the corpus as a whole.
Older speakers aspirate more than younger speakers, but still only reach a frequency of
12% aspiration of (k). The pattern for other voiceless stops is predicted to be similar,
albeit with lower frequencies for (p) and (t).

The pilot data for (k) indicates that aspiration is primarily indicative of older
speakers, and is rapidly disappearing from the dialect. This observation is reinforced by

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|}
\hline
Factor Group & Weight  \\
\hline
Gender & & \\
Female & 0.559 & \\
Male & 0.435 & \\
\hline
*Age & & \\
19-29 & 0.279 & \\
30-49 & 0.607 & \\
50+ & 0.676 & \\
\hline
Class & & \\
Lower & 0.309 & \\
(Middle)/Upper & 0.579 & \\
\hline
*Language(s) & & \\
Fluent Mayan & 0.466 & \\
Some Mayan & 0.400 & \\
Spanish only & 0.554 & \\
\hline
\end{tabular}
\caption{VARBRUL analysis for [k\textsuperscript{h}] pilot data. Significance indicated by *.}
\end{table}

\textsuperscript{115} A statistical analysis with so few speakers should be taken as indicative of trends only.
the fact that the earliest studies of Yucatan Spanish point to aspiration as indicative of the
dialect, while later studies place it in a secondary role. Based on the low frequency of [kʰ]
in this data\textsuperscript{116}, aspiration is not seen as an important marker in Yucatan Spanish, and
further study of (p t k) will be reserved for future research.

\textbf{5.6 Glottal stop (?) pilot data}

As with aspiration, the maintenance of hiatus across word boundaries via the
insertion of a glottal stop is frequently cited as indicative of Yucatan Spanish in early
studies (Nykle 1938, Suarez 1945/1979). Again, as with aspiration, later studies do not
mentions [ʔ] only briefly (p. 88), and García Fajardo (1984) discusses [ʔ] only in the
context of preglottalized consonants (pp. 82-83). Instead, these studies focus on the
voiced stops and final nasal variants discussed in this dissertation. Initial analysis of the
present data suggested that glottal stop insertion occurs only sporadically, as indicated by
the lack of attention paid to this variable by later studies. As for (k), these impressions
were tested via a pilot analysis with six speakers from the present study. The speakers
were the same used for the pilot analysis of (k): one male and one female speaker from
each age group. Four of these speakers are (middle)/upper class, and two are lower class.
Three subjects speak only Spanish; of the remaining three, two subjects are fluent Mayan
speakers, and the third speaks some Mayan. Most varieties of Spanish disfavor hiatus,

\textsuperscript{116} And therefore by extension the even lower frequencies of [pʰ] and [tʰ].
and link vowels across word boundaries. For example, the phrase *no es* is articulated as one unit, *[noes]*, without a pause between words. The pilot analysis was limited to this phonetic context in which initial impressions showed glottal stop insertion to be most salient; between vowels across word boundaries (cf. Lope Blanch 1984/1987). This analysis would indicate whether further analysis of (?) is warranted.

Acoustically, an inserted glottal stop will appear as a period of relative silence between the two vowels. Elided tokens, however, will show a continuation of the vocalic formants. The following spectrograms made from speakers in the pilot study demonstrate this difference.

Figure 40: Hiatus across word boundary with [?]: spectrogram for *de hijo* ‘of a son’ spoken by an upper-class female informant. The arrows indicate the beginning and end of the stop.
A comparison of Figure 40 and Figure 41 clearly shows the difference across word boundaries between hiatus via glottal stop insertion and the elided vowels common in most varieties of Spanish.

The frequencies of [ʔ] for the different social groups indicate that glottal stop insertion in this context is rare for these speakers of Yucatan Spanish. Of a total of 2567 tokens of (ʔ) produced by the six speakers in this pilot, 135 of the tokens represent glottal stops. The following table indicates the frequencies and percentages for each variant of (ʔ).
As Table 36 indicates, hiatus across word boundaries is infrequent in the data, occurring in 5% of the tokens. As for phonetic context, [?] was inserted most often before a stressed vowel\textsuperscript{117}.

With regard to social factors, the following frequencies show that [?] occurs primarily among older, lower class, Mayan-dominant speakers.

\begin{table}[h]
\centering
\caption{Frequencies and percentages for (?): pilot data}
\begin{tabular}{|l|c|c|}
\hline
 Variant & Tokens & Percentage of total \\
\hline
 [?] (hiatus) & 135 & 5\% \\
 [0] (elision) & 2432 & 95\% \\
 Total & 2567 & 100\% \\
\hline
\end{tabular}
\end{table}

\begin{table}[h]
\centering
\caption{Frequencies for [?] by social group: pilot data}
\begin{tabular}{|l|l|c|}
\hline
 Factor Group & Percentage \\
\hline
 Gender & \\
 Female & 1\% \\
 Male & 8\% \\
 Age & \\
 19-29 & 0\% \\
 30-49 & 6\% \\
 50+ & 9\% \\
 Class & \\
 Lower & 14\% \\
 (Middle)/Upper & 1\% \\
 Language & \\
 Fluent Mayan & 14\% \\
 Some Mayan & 0\% \\
 Spanish Only & 1\% \\
\hline
\end{tabular}
\end{table}

\textsuperscript{117} The frequencies of following stressed vowels are: /ɨ/ 17\%, /ɨ/ 14\%, /â/ 8\%, /û/ 6\%, and /é/ 5\%. 
The frequencies indicate that for these speakers, [ʔ] insertion occurs most often among fluent Mayan-speakers (14%). These fluent speakers are the same two lower-class speakers in this pilot; thus lower-class demonstrates an identical frequency (14%) of glottal stop insertion. Hiatus is also maintained most among men, and among speakers over the age of 30. It is clearly a declining feature of the dialect. The youngest groups of speakers produce almost no tokens of [ʔ]; repeated listenings confirm this trend holds across the larger corpus for this study.

The small subject pool for this pilot made it difficult to obtain a good statistical fit in VARBRUL. An examination of the frequencies Table 37 and the profile of the speakers randomly selected for this pilot suggested strong interactions between gender and class, and age and language. Thus a collapsed factor analysis produced an accepted model. Still, given the small subject pool, these results should be interpreted in light of the frequency data above.
The VARBRUL analysis indicates that lower class males produce the most [ʔ], even though the small number of speakers caused this difference to not be selected as significant. Likewise, the collapsed factor group of age and language demonstrates that both are important to the production of [ʔ]; being above the age of 50 and speaking fluent Mayan both correlate significantly with glottal stop insertion. Note that the high weight assigned to the oldest Spanish only group is due to the size of the pilot corpus; the frequencies in Table 37 suggest that this particular factor weight does not give a realistic picture of the data.

This pilot data indicates that [ʔ] is primarily inserted by speakers of Mayan, and is quickly undergoing standardization in Yucatan Spanish. The trends from this pilot study
confirm the lack of attention paid to this variable by later studies of the dialect. Based on the low frequency of [ʔ] in this data, glottal stop insertion across word boundaries is not as important of a feature of Yucatan Spanish as the other variables discussed in this dissertation\(^{118}\). Therefore, further study of (?) will be reserved for future research.

### 5.7 Summary of data analysis

This chapter has detailed the linguistic and sociolinguistic analysis of phonetic variables in Yucatan Spanish. The overall trend in the dialect is one of standardization; that is speakers of Yucatan Spanish are adopting more pan-Hispanic norms with regard to voiced stops, aspiration of voiceless stops, and glottal stop insertion. The majority of the variables show a large amount of intra-speaker variation, but with a general decrease between the youngest and middle aged groups; both real time and apparent time data suggest that these features are disappearing, as these ‘typical’ Yucatan variants are used less by the youngest speakers than by the two older generations. Interestingly, one Yucatan Spanish variant, [−m], demonstrates the opposite trend, with more labialization occurring among speakers under the age of 50. The reasons behind this discrepancy likely are due to social factors, and this hypothesis will be explored further in the next chapter.

\(^{118}\) As noted in Lope Blanch (1984/1987), [ʔ] may occur in other contexts, such as between consonants or word initially. These contexts were not examined here, but may show different results in future study.
Chapter 6
Synthesis and conclusions

6.0 Introduction

The previous chapter presented data and analysis from each of the phonetic variables in Yucatan Spanish studied in this dissertation: (-n), (b d g), and initial pilot data on (k) and (?). This chapter will focus on synthesizing the data from individual variables vis-à-vis the sociolinguistic factors of gender, age, class, and language, with the goal of obtaining a more complete picture of the dialect. First, the role of social factors across the dialect will be explored. This discussion will lead to the conclusion that there are two competing trends in Yucatan Spanish at present; standardization via the reduction of regional traits vs. the maintenance of local identity via the increased use of a salient, easily acquired variant, namely final [m]. Possible reasons, both social and linguistic, behind this dichotomy will be discussed. Next will be an examination of the sociolinguistic trends apparent in this data, with focus on the gender paradox for these speakers of Yucatan Spanish, as well as the role of class and Mayan language on the dialect. Finally, the chapter will end with a discussion of limitations of the present study, as well as areas for future research.
6.1 The role of gender

Labov (2001) states that “gender is a powerful differentiating factor in almost every case of stable social stratification and change in progress that has been studied” (p. 262). As the data in Chapter 5 showed, Yucatan Spanish is no different. With the exception of (?), women produce more ‘typical’ Yucatan variants than do men. Interestingly, women use more Yucatan pronunciations regardless of whether a variant is increasing or decreasing in frequency\(^{119}\). The following chart shows the frequencies and VARBRUL weights for gender for each of the phonetic variables in this study.

Table 39: Frequencies and VARBRUL weights for gender: all phonetic variables; significance marked by *\(^{120}\).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>VARBRUL weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>*[m]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>28%</td>
<td>0.548</td>
</tr>
<tr>
<td>Male</td>
<td>22%</td>
<td>0.456</td>
</tr>
<tr>
<td>*[b]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>43%</td>
<td>0.520</td>
</tr>
<tr>
<td>Male</td>
<td>40%</td>
<td>0.478</td>
</tr>
<tr>
<td>*[d]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>37%</td>
<td>0.576</td>
</tr>
<tr>
<td>Male</td>
<td>25%</td>
<td>0.425</td>
</tr>
<tr>
<td>*[g]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>30%</td>
<td>0.539</td>
</tr>
<tr>
<td>Male</td>
<td>25%</td>
<td>0.462</td>
</tr>
<tr>
<td>[kʰ] (pilot data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>9%</td>
<td>0.559</td>
</tr>
<tr>
<td>Male</td>
<td>5%</td>
<td>0.435</td>
</tr>
<tr>
<td>Glottal stop (pilot data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1%</td>
<td>0.438</td>
</tr>
<tr>
<td>Male</td>
<td>8%</td>
<td>0.559</td>
</tr>
</tbody>
</table>

\(^{119}\) The gender paradox in Yucatan Spanish will be addressed later in this chapter.

\(^{120}\)
As Table 39 indicates, for every variable except (ʔ), women produce more yucateco variants by an average of 6%. The largest gender difference is found with [g] (12%), while [b] shows the smallest gender difference (3%). Men, on the other hand, produce more tokens of [ʔ] insertion than do women (a difference of 7% in the pilot data). Importantly, many of the subjects in this study indicated that glottal stop insertion is one of the more stigmatized characteristics of yucateco speech, and when asked to imitate traditional speech patterns, these speakers adjusted their speech primarily by maintaining hiatus across word boundaries. In other words, men use more of a salient, stigmatized variant [ʔ], while women produce more of the other variants. It will be argued later in this chapter that the variants for which women produce higher frequencies are either less salient [b d g], [kʰ], or non-stigmatized [m].

6.2 The role of age

Like gender, age is consistently an important factor in the production of Yucatan variants in this study. With the exception of [m], all regional variants demonstrate a decline across age groups; for (b d g), (k), and (ʔ), the youngest speakers produce far fewer regional variants than do older speakers. Final nasals, however, show the opposite

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120 The pilot data is based on semi-randomly selected speakers (balanced for gender and age). The lack of significance for these two variables may be indicative of the larger sample, or may be due to the difficulties of obtaining reliable statistics based on so few speakers. This will be explored in future research. Either way, a gender difference of 7% for [ʔ], for example, indicates substantial gender differentiation.

121 This along with the inclusion of local lexical items, many of Mayan origin. Speakers referred to the local dialect as hablar pujado ‘to speak while pushing’ or hablar aporreado ‘to speak with a lot of stress’. While both of these terms can refer to suprasegmental features of the language, they also describe the acoustic effect of glottal stop insertion on a Spanish-tuned ear.
trend. Speakers under the age of 50 produce more [m] than do older speakers. The chart below compares frequencies and VARBRUL weights for age across all variables.

Table 40: Frequencies and VARBRUL weights for age: all phonetic variables; significance marked by *.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>VARBRUL weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>*[m]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>26%</td>
<td>0.543</td>
</tr>
<tr>
<td>30-49</td>
<td>36%</td>
<td>0.646</td>
</tr>
<tr>
<td>50+</td>
<td>15%</td>
<td>0.363</td>
</tr>
<tr>
<td>*[b]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>30%</td>
<td>0.376</td>
</tr>
<tr>
<td>30-49</td>
<td>44%</td>
<td>0.502</td>
</tr>
<tr>
<td>50+</td>
<td>46%</td>
<td>0.560</td>
</tr>
<tr>
<td>*[d]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>19%</td>
<td>0.355</td>
</tr>
<tr>
<td>30-49</td>
<td>39%</td>
<td>0.536</td>
</tr>
<tr>
<td>50+</td>
<td>31%</td>
<td>0.547</td>
</tr>
<tr>
<td>*[g]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>12%</td>
<td>0.276</td>
</tr>
<tr>
<td>30-49</td>
<td>33%</td>
<td>0.542</td>
</tr>
<tr>
<td>50+</td>
<td>33%</td>
<td>0.605</td>
</tr>
<tr>
<td>*[kʰ] (pilot data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>5%</td>
<td>0.279</td>
</tr>
<tr>
<td>30-49</td>
<td>6%</td>
<td>0.607</td>
</tr>
<tr>
<td>50+</td>
<td>12%</td>
<td>0.676</td>
</tr>
<tr>
<td>*Glottal stop (pilot data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>0%</td>
<td>0.258</td>
</tr>
<tr>
<td>30-49</td>
<td>6%</td>
<td>0.621</td>
</tr>
<tr>
<td>50+</td>
<td>9%</td>
<td>0.651</td>
</tr>
</tbody>
</table>

As Table 40 demonstrates, age was a significant factor in the analysis of every variable in this study. Both the frequencies and the VARBRUL weights confirm the observation made above; the use of all Yucatan variables, with the exception of [m], show a general decrease across age groups, with an average VARBRUL weight of 0.308 for the youngest speakers across declining variables. In other words, the dialect has been
undergoing increasing ‘standardization’ over the last two generations. This is not surprising, given that both bilingual and monolingual speakers in the oldest generation were exposed to more converged L2 Spanish throughout their lifetimes, whereas younger speakers primarily interact with monolingual Spanish-speakers or Spanish-dominant bilinguals. The lack of educational opportunities for Mayan-speaking families and the relatively common practice of having Mayan nannies in the homes meant that older speakers were much more likely to interact daily with Mayan-dominant speakers on a daily basis. The increased access to education and subsequent acculturation to Spanish-speaking society for younger generations is attested in this dissertation by the middle aged speakers with some knowledge of Mayan. The final nasal variant [m], on the other hand, shows an increase for middle aged and younger speakers, the opposite of what is seen with the other Yucatan variants. In spite of a spike in frequencies among speakers 30-49, both the youngest and middle age groups correlate significantly with higher use of [m]. This will be addressed further later in this chapter.

6.3 The role of class

Social class, in the manner in which it is implemented in this study, has produced problematic results. It is likely that the binary distinction of lower vs. (middle)/upper class is not fine-grained enough to capture the true role of socioeconomic status in variation in Yucatan Spanish. This will be further addressed as a limitation of this study at the end of this chapter.

Still, as argued in Chapter 4, the distinction into blue collar vs. white collar workers does capture the primary class distinction in the Yucatan; i.e. those that work as
domestic servants or manual laborers, and those that perform office work, live in desirable neighborhoods, and can afford to hire domestic workers in their homes. For the speakers in this study, class showed a fairly consistent trend across variables. The speakers that produced more ‘typical’ Yucatan variants at higher rates of frequency tended to the middle class children/grandchildren of poorer, lower class families. The following table shows the results for class across variables for the speakers in this study.

Table 41: Frequencies for class: all phonetic variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>[m]</td>
<td></td>
</tr>
<tr>
<td>lower class</td>
<td>26%</td>
</tr>
<tr>
<td>(middle)/upper class</td>
<td>24%</td>
</tr>
<tr>
<td>[b]</td>
<td></td>
</tr>
<tr>
<td>lower class</td>
<td>41%</td>
</tr>
<tr>
<td>(middle)/upper class</td>
<td>42%</td>
</tr>
<tr>
<td>[d]</td>
<td></td>
</tr>
<tr>
<td>lower class</td>
<td>33%</td>
</tr>
<tr>
<td>(middle)/upper class</td>
<td>30%</td>
</tr>
<tr>
<td>[g]</td>
<td></td>
</tr>
<tr>
<td>lower class</td>
<td>30%</td>
</tr>
<tr>
<td>(middle)/upper class</td>
<td>27%</td>
</tr>
<tr>
<td>[kʰ] (pilot data)</td>
<td></td>
</tr>
<tr>
<td>lower class</td>
<td>6%</td>
</tr>
<tr>
<td>(middle)/upper class</td>
<td>8%</td>
</tr>
<tr>
<td>Glottal stop (pilot data)</td>
<td></td>
</tr>
<tr>
<td>lower class</td>
<td>14%</td>
</tr>
<tr>
<td>(middle)/upper class</td>
<td>1%</td>
</tr>
</tbody>
</table>

The data from Chapter 5 showed that the significance of class for most of the variables in Table 41 is dubious; with the exception of [ʔ], the class difference for these speakers is an average of 2.2% across variables. The inclusion of class in the VARBRUL analysis often led to unaccepted statistical models, and the weights cannot be considered
reliable. For that reason, VARBRUL weights have not been included in Table 4. Rather, frequencies indicate very little difference based on class for [m], [b d g], and [k]. This is not to say, however, that a more fine-grained conception of class in future studies will not find important differences for these variables. The final variable, glottal stop insertion, does show a strong variation based on class; lower class speakers in the pilot data were 13% more likely to use [?] than were (middle)/upper class speakers. As discussed in Chapter 5, this variant seems to occur primarily among Mayan-dominant speakers, and as argued in the previous section, is both a salient and stigmatized feature of Yucatan Spanish. This stigma and conscious awareness of hiatus may have impeded the variant from moving into the middle or upper classes. It will be argued later in this chapter, however, that the other variables are either below the level of consciousness for most speakers, or are imbued with positive connotations of local identity, and thus were able to permeate the higher classes as speakers entered the socioeconomic mainstream.

6.4 The role of bilingualism with Mayan

The role of contact with Yucatec Mayan has been a point of debate in the literature on Yucatan Spanish. As discussed in Chapter 2, early studies on the dialect tended to label any non-standard feature as due to Mayan influence. Later studies, however, tended to prefer explanations for Yucatan Spanish variation based on internal development of the language. In this study, knowledge of Mayan correlates with more

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122 The reader is referred to the discussion of each variable in Chapter 5 for VARBRUL weights and discussion. In order to not confuse the present discussion with what are likely inaccurate VARBRUL analyses, the weights have been left out of this table.
use of Yucatan variants for all variables (with the possible exception of [kʰ]). Interestingly, however, it is often the speakers with passive knowledge of Mayan who produce the most tokens of Yucatan variants. These speakers are Spanish-dominant, but have been exposed to converged input from their Mayan-speaking families throughout their lives. The table below summarizes frequencies and VARBRUL weights for language across variables.

Table 42: Frequencies and VARBRUL weights for language: all phonetic variables; significance marked by *.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>VARBRUL weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>*[m]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>30%</td>
<td>0.676</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>31%</td>
<td>0.565</td>
</tr>
<tr>
<td>Spanish only</td>
<td>19%</td>
<td>0.380</td>
</tr>
<tr>
<td>*[b]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>42%</td>
<td>0.526</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>44%</td>
<td>0.559</td>
</tr>
<tr>
<td>Spanish only</td>
<td>41%</td>
<td>0.463</td>
</tr>
<tr>
<td>*[d]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>37%</td>
<td>0.671</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>38%</td>
<td>0.594</td>
</tr>
<tr>
<td>Spanish only</td>
<td>26%</td>
<td>0.380</td>
</tr>
<tr>
<td>*[g]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>34%</td>
<td>0.677</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>28%</td>
<td>0.545</td>
</tr>
<tr>
<td>Spanish only</td>
<td>35%</td>
<td>0.398</td>
</tr>
<tr>
<td>*[kʰ] (pilot data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>6%</td>
<td>0.466</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>7%</td>
<td>0.400</td>
</tr>
<tr>
<td>Spanish only</td>
<td>8%</td>
<td>0.554</td>
</tr>
<tr>
<td>*Glottal stop (pilot data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent Mayan</td>
<td>14%</td>
<td>0.607</td>
</tr>
<tr>
<td>Some Mayan</td>
<td>0%</td>
<td>0.134</td>
</tr>
<tr>
<td>Spanish only</td>
<td>1%</td>
<td>0.624</td>
</tr>
</tbody>
</table>
The pilot data for \([k^h]\) and \([?]\) is based on six speakers, and should be taken as indicative of trends only. For example, the VARBRUL weights for \([?]\) indicate a trend that is not supported by the frequencies; glottal stop insertion is clearly most prevalent among fluent Mayan-speakers. The data for the primary variables ([m] [b d g]), however, show very little difference among language groups for most Yucatan variants. Rather, as argued in Chapter 5, age is a more important as a predictor of Yucatan variants than is language (or any other social variable). It does appear, however, that statistically at least some Mayan does have an effect on the use of most Yucatan variants. The possible role of Mayan on each of the variables will be discussed in Section 6.8.3.

### 6.5 Summary of variants across social groups

The previous discussion, as well as data from Chapter 5, indicate that age is the primary factor in determining the use of Yucatan variants, or conversely, the amount of standardization for the variables in this study; for all variants but [m], the older the speaker, the more likely he/she is to use regional variants. This holds for the voiced stops, aspiration of (k), and glottal stop insertion. For [m], the picture is complicated by a peak in apparent time for middle-aged speakers. Still, [m] is significantly more likely in speakers under the age of 50. Gender is also an important factor, with women leading men for all variables except (?). Class does not produce consistent results, and frequencies indicate very little difference across classes for these variables. Of course, a different implementation of class might very well produce important differences. Finally,
there is a trend for Mayan-speakers to use more regional variants, but like class, this factor is not as important of a predictor as age and gender. The following section will explore these results in more detail, providing a possible explanation of the trends seen thus far.

6.6 Competing trends in Yucatan Spanish

The data and discussion from the previous section and from Chapter 5 demonstrate that there are two competing trends underway in Yucatan Spanish. The first of these is the move towards the standardization of regional dialect forms, seen in the decrease in frequency from older to younger speakers for the variables (b d g) (k) and (¿). For these variables, Yucatan Spanish is becoming more like other, non-contact varieties of Spanish; among the youngest speakers, (b d g) demonstrate the expected stop/fricative alternation more often than among older speakers, by an average of 18%. Likewise, for speakers under 50, aspiration of (k) is very sporadic (5.5%), and for the youngest speakers, glottal stop insertion is practically non-existent (0%). The clear trend towards standardization of these variables is evident in the following chart, comparing frequencies across apparent time for each of these declining variables.
These variants all show the same general trend of decrease across age groups, particularly between middle-aged and the youngest speakers. The other variable in this study, (-n), shows a different trend. The use of final [m], also a regional dialect form, shows an increase in use, with a peak of 36% among middle-aged speakers. Thus, while four of the five\textsuperscript{123} ‘standardizing’ variables in Figure 42 show a slight difference between older and middle-aged speakers, followed by a sharp decline for the youngest speakers, [m] is produced more frequently by middle-aged and younger speakers than by older subjects. The difference can be seen by adding frequencies for [m] to the data in Figure 42.

\textsuperscript{123} Note that [d] also peaks among middle-aged speakers. The difference between [d] and [m] is that for [m], both middle-aged and younger speakers produce more regional variants than do older speakers. For [d], younger speakers produce significantly less regional variant than do either of the other two groups.
The different behavior across variables is clear; [m] shows a sharp increase across the first two generations, with a peak among middle-aged speakers. As discussed in Chapter 5, it is not clear from this data whether this peak signifies that the change [-n] > [-m] reached its apex among middle aged speakers and has since reversed, or if it is representative of the peak in apparent time characteristic of changes in progress (cf. Labov 2001, pp. 454-460). Future data is required to determine the ultimate direction of [m].

The question, then, is what accounts for the different behaviors of non-standard, regional dialect forms across the same speakers? Why are most of the dialect forms retreating, while one shows a general increase in frequency? Interestingly, the answer to both trends appears to be the same: decreasing isolation of the Yucatan resulting in more contact with ‘standard’ Mexican Spanish via speakers from other areas of the country.

Figure 43: Frequencies across apparent time for ‘standardizing’ variables and [m].
6.7 Increased contact and local identity

From the examination of the data in Chapter 5 and the preceding section, it is clear that something changed within Yucatan over the last 20 years, when the now middle-aged speakers were growing up and their language use was stabilizing (cf. Chambers 2003, pp. 170-171); the middle generation of speakers in this study represents the turning point for all variables in Figure 43. So the question that must be answered is the following: What happened in Yucatan society that may account for the linguistic shift visible among speakers that came of age during that time?

The answer proposed here is that the change that occurred was a demographic shift, resulting in an increase in contact with the rest of Mexico, and therefore with speakers of other varieties of Mexican Spanish. The isolation in which Yucatan had existed throughout most of its history began to rapidly diminish, a trend that continues to the present day. This increasing contact is due to several factors, including economic, demographic, and educational reasons. The hypothesis proposed in this dissertation is that increased educational opportunities, immigration from other areas of Mexico, and a rise in tourism as the primary industry has led to the ‘standardization’ of regional Yucatan Spanish features almost categorically. Younger speakers speak a variety of Spanish much more in tune with national standard variety (and with pan-Hispanic language norms) than do older speakers; e.g. they produce the stop/fricative alternation for voiced stops, rarely aspirate voiceless stops, and prefer elision to hiatus across word boundaries. As noted previously, however, [m] shows a trend of increased use among speakers under the age of 50. The explanation proposed here for this discrepancy is that
the strong regional identity present in Yucatan has caused speakers to increase production of a salient pronunciation as a marker of *Yucatan-ness* in the face of increased contact. Each of these possibilities will be addressed in turn in the following discussion.

6.7.1 *Increased contact with Mexican Spanish*

As noted in Chapter 1, several events occurred during the past two decades that increased contact between speakers of Yucatan Spanish and speakers of other varieties of Mexican Spanish, diminishing the historical isolation of the peninsula. The first of these is the increased immigration into the Yucatan from other parts of Mexico, specifically from Mexico City. Yucatan experienced a 43% increase in immigration from Mexico City during the 1990’s; this rate of immigration was even higher in Mérida (46%) (INEGI 1990, 2000). This increased immigration likely has multiple causes, among the most important being residents fleeing the high rates of crime and pollution in Mexico City, as well as the devastation brought about by the 1985 earthquake in central Mexico. The result is that in Mérida today there are *colonias*, or neighborhoods, composed almost entirely of immigrants from Mexico City.

Additionally, the rise of tourism as the primary economic force of the region occurred over the last 20-30 years. Tourism on the peninsula, while centered in Cancún in the neighboring state of Quintana Roo, is an important part of the local economy, as evidenced by the construction of several internationally-owned large hotels in Mérida

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124 Several speakers in the present corpus cited both of these reasons as explanation for increasing immigration. See Appendix D for examples.
during the 1990’s. Likewise, most of the major Mayan ruins in Mexico (i.e. Uxmal, Chichén Itzá) are found within the state of Yucatan. The tourism based around these attractions, both domestic and foreign, has increased the daily contact between yucatecos and speakers of other varieties of Spanish.

An additional source of increased contact is through a mini manufacturing boom taking place within Yucatan. Biles (2004) shows that during the 1990’s there was a 1000% increase in factory (maquiladora) construction within the state (p. 520). For the most part, these factories are owned by a combination of local, domestic and foreign firms (p. 523). The creation of these globalized businesses increases both the contact with speakers from other regions as well as having a positive effect on the local economy. (Biles 2004, p. 528). These economic changes can lead to increased opportunities for poorer inhabitants of the state.

Finally, younger speakers often produce more ‘standard’ forms, as these speakers often have more access to formal education (López Morales 1993, p. 115). This appears to be the case in Yucatan; educational opportunities within the state have improved over the past 20 years. From 1990 to 2000, the percent of yucatecos without formal education dropped from 15.4% to 11%. Likewise, the number of residents with post-elementary school education rose from 36% to 46% (INEGI 2000). This trend is mirrored in the speakers in this dissertation: one family in particular serves as an example. The grandmother of speaker 208 is a Mayan-dominant speaker, and is functionally illiterate. Her son, the father of speaker 208, is a fairly balanced bilingual, but whose Spanish is characterized by second language traits (lack of gender agreement, inconsistent verb conjugations, etc.). He is also functionally illiterate. This subject appears in this study as
speaker 210. However by the third generation the situation has changed considerably. Speaker 208, the son of speaker 210, is a first year college student at a regional university outside of Mérida. Not surprisingly, this subject is the most ‘standard’ speaker of his family. Increased access to education appears to have led to a decreased use of regional dialect forms.

These factors, increased contact with other varieties of Spanish (especially central Mexican dialects) and enhanced opportunities for education, have had the effect of imposing pan-Hispanic linguistic norms for most variables on the regional variety of Yucatan. Lipski (1994) shows that the same has happened to other regional varieties of Mexican Spanish, in part due to contact with the prestigious dialect of Mexico City (e.g. the ‘standardization’ of regional forms in Veracruz and Acapulco) (pp. 282-283)\textsuperscript{125}.

As mentioned previously, however, [m] demonstrates the opposite trend; an increase in frequency for speakers under the age of 50. This conclusion is consistent for previous data as well; Yager (1989) also found that the use of [m] was increasing for speakers in that study. The answer of why one regional variant is increasing in the face of more general standardization across the dialect lies in the socio-historical environment of Yucatan. Based on cultural and historical differences with the rest of Mexico, local identity is particularly strong in Yucatan, with many speakers considering themselves yucateco rather than mexicano. The hypothesis put forth in this dissertation is that the frequency of [m] is increasing for the same reason that the other variables are showing a

\textsuperscript{125} It is important to note, however, that Yucatan speakers are not adopting Central Mexican Spanish as the norm, but rather a more generalized Hispanic standard. Thus even in their standardization, speakers distinguish themselves from residents of Mexico City.
decrease in use: increased contact with speakers from other areas of Mexico. That is, [m] is seen as a linguistic marker of local identity and pride in being *yucateco*. Importantly, the variation for (b d g) and (k) appears to be less salient and below the level of consciousness for most speakers of Spanish. Speakers simply are not aware of the stop-fricative alternation, and aspiration of voiceless stops may not be as salient as either [m] or [?]. This is reinforced by the fact that, when asked to imitate stereotypical Yucatan Spanish, none of the speakers in this study mentioned these variables. However the remaining two variables, [m] and [?], are at the level of conscious awareness for many speakers; speakers asked to imitate stereotypical Yucatan Spanish maintained hiatus across word boundaries, among other traits. The insertion of [?] appears to be stigmatized and connected primarily with Mayan-dominant speakers from small *pueblos* outside of Mérida. The frequency of [?] insertion is rapidly dropping, as speakers shift to more ‘standard’ Spanish. The other variable that speakers are aware of, [m]\(^{126}\), has successfully spread throughout the community, and is accepted by the upper classes in Yucatan (Yager 1989). The change [-n] > [-m], then, is a socially acceptable way for speakers to maintain their linguistic identity as *yucatecos* in the face of increasing immigration and dialect contact (cf. Labov 1980 p. 263 for similar arguments regarding Philadelphia English). Tabouret-Keller (1997, p. 317) demonstrates that a single pronunciation can serve as a marker of in-group identity, and [m] may serve as a *shibboleth* for speakers of

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\(^{126}\) In coda position, labials are more salient than coronals or velars (cf. Jun 1995 and Winters 2000). Thus speakers are more able to identify a final [m] than either [n] or [ŋ]. The relative salience of this segment may have allowed for increased attention to be paid, thereby enabling its rapid adoption as a marker of identity.
Yucatan Spanish. In other words, speakers have adopted an easily learnable, salient variant to preserve their status as native yucatecos, so as to both assert their regional pride and to not be confused for a recent immigrant to the area. The use of [m] serves to both include the speaker as a native of the region, while also excluding him from the group comprised of outsiders (Le Page & Tabouret-Keller 1985, p. 181). This in many ways in analogous to the centralized diphthongs reported for Martha’s Vineyard in Labov (1963). Like Yucatan, Martha’s Vineyard represented an isolated, traditional community, albeit on a much smaller scale. Labov notes that the highest correlation of regionally centralized diphthongs occurred among speakers who resented the presence of outsiders (p. 297). These same speakers had the most favorable view of the local community:

“It is apparent that the immediate meaning of this phonetic feature is “Vineyarder.” When a man says [rıntı] or [hóos], he is unconsciously establishing the fact that he belongs to the island: that he is one of the natives to whom the island really belongs.” (p. 304)

Thus, on Martha’s Vineyard, a regional variant is “adopted and exaggerated as a sign of social identity in response to pressure from outside forces” (p. 307). A similar situation arises in the isolated community of Ocracoke Island, where a regional dialect historically isolated from the ‘standard’ language is retreating in the face of increased contact with mainland varieties (Wolfram & Schilling-Estes 1995). The speakers with the strongest connection to the island are those that maintain and expand the local pronunciation of [oy] for (ay), as in hoi toid ‘high tide’, even as the dialect as a whole is standardizing. This maintenance of one form as a marker of local identity is a “dialectal last gasp before the [oy] variant dies” (p. 709). Likewise, in Yucatan Spanish, if a speaker says [pám] for ‘pan’ bread or [kamjóm] for ‘camión’ bus, he/she is marking themselves as native
yucateco, as well as expressing solidarity with the local culture in the face of increased immigration and dialect loss (cf. Le Page & Tabouret-Keller 1985, p. 181). In this way the extension of a regional form acts as “a sort of linguistic ‘self-defense’ against the encroachment of the outside world” (Wolfram & Schilling-Estes 1999, p. 510). In order for speakers to consciously adopt a variant as a marker of identity, two criteria have to be met. First, speakers must be aware of the variant in question. Second, speakers must know that one form is to be preferred over the other (López Morales 1993, p. 205).

Within the Yucatan, this awareness of [m], and the relation of the variant to local identity, can be seen superficially through popular culture; the author purchased a t-shirt with the phrase ‘Vaya bien’ (for ‘vaya bien’ *may it go well/have a nice day*) from a popular store in Mérida specializing in yucateco phrases (many of them in Mayan). The popularity of items such as this both demonstrate the level of awareness and the cultural importance of [m], as well as possibly serving to extend the use of [m] further throughout the community. Interestingly, while this dissertation focuses on the change [n] > [m], an epenthetic nasal appeared with some frequency in the word ‘este’ *filler ‘um’, lit. ‘this’, which was often pronounced [estem] by labializing speakers. While this form also surfaced with an alveolar [n], [esten], the epenthesification of a nasal (frequently [m]) in a context where none is underlying may indicate incipient phonologization and extension of [m] to other contexts, as [m] itself comes to mark local identity. Future research in real time is needed to address this question.

In sum, the hypothesis of this dissertation is that the two patterns seen for the ‘typical’ variables studied here are due to the same cause. A demographic shift over the last 20 years has influenced both the direction and the rate of linguistic change in
Yucatan. Increased contact with Mexican Spanish via immigration, tourism, and education has led to the decrease in use of less salient (subconscious) regional variants (i.e. [b d g] and [kʰ]), along with the socially stigmatized [ʔ], while at the same time causing an increase in the expression of local identity via the expansion of [m]. This increase is conscious for many speakers, but not all, as some of the high frequency [m] speakers in this corpus professed ignorance of the change. The following section will briefly address the sociolinguistic trends for gender, class, and language seen in this study.

6.8 Sociolinguistic trends in Yucatan Spanish

The previous section addressed the variable of age via the discussion of frequencies of Yucatan variables across apparent time. This section will briefly address the gender paradox in Yucatan Spanish, as well as hypothesize on the roles of social class and the Mayan language on the dialect.

6.8.1 The gender paradox in Yucatan Spanish

As mentioned previously, the linguistic behavior of men and women across numerous sociolinguistic studies has been labeled the gender paradox. Labov (2001) summarizes the problem as:

“Women conform more closely than men to sociolinguistic norms that are overtly prescribed, but conform less than men when they are not” (p. 293).
As stated here, the present data from Yucatan Spanish seems to confirm the gender paradox. Women use more Yucatan variants than men for all variables, with the exception of [ʔ]. This fact is interesting because men appear to be adapting to national norms for (b d g) and (k) more quickly than women, while female speakers are ahead of men in their use of the locally prestigious [m]. Recall from the previous discussion that variation in (b d g) and (k) is less salient than for other variables, and appears to be below the level of consciousness for most speakers. As such, the ‘standard’ form of these variables cannot be overtly prescribed, and women are indeed the more conservative speakers with regards to these phones. For the variables of which speakers are aware, [m] and [ʔ], one is overtly stigmatized while the other is locally prestigious. Women are the innovators for both of these variables, producing less regional [ʔ] and more [m], a marker of local identity. Thus women in this study do conform to overtly prescribed (regional) norms. The gender paradox holds for these speakers of Yucatan Spanish. As in other studies, the paradox in Yucatan Spanish seems to be related to differing gender roles and subsequent differences in the structure of social networks. Strong network ties, created when speakers have numerous connections to one another through family, friends, civic organizations, neighborhoods, schools and religious institutions, foster the preservation of traditional behaviors, including speech (Penny 2000, p. 64). Eckert (2000) demonstrates that belonging to a particular social network reinforces common behaviors, dress, and language forms. Milroy (1987) notes that strong connections within a community are reflected linguistically in a preference for localized dialect forms. Conversely, weak social ties may encourage the adoption of non-regional norms through a process of
accommodation and dialect leveling (Penny 2000, p. 65). Within the Yucatan, it can be generalized that women maintain strong network ties, while men’s interactions are characterized by weak ties. Traditionally, women in the Yucatan have worked primarily as homemakers, and their primary social networks are though their families and their neighborhoods. Importantly, family members often live close to one another within the same neighborhood, and every neighborhood has its own church, parks, and corner stores. The importance of the neighborhood and family is reflected in the way Yucatecan families relate to one another; housewives know practically everyone in their neighborhoods, and one of the first questions asked of a new acquaintance is how they fit into the local structure, e.g. who their family is and how they are connected to other neighbors. The strong social networks defined by the neighborhood may have encouraged the preservation of more traditional dialect forms among women\textsuperscript{127} (cf. Milroy & Milroy 1978, Milroy & Gordon 2003, Chambers 2003). Men, on the other hand, work outside the home, and are in more frequent contact with speakers of different varieties of Spanish (dialects as well as sociolects). Men’s speech therefore conforms more to the ‘standard’ for many of the variables, as their looser social networks favor the adoption of non-traditional forms\textsuperscript{128}. Women, however, have been shown to be more attuned to changes in the sociolinguistic environment (Chambers 2003, p. 147), and this meta-linguistic knowledge may have led to women adopting the innovative prestige variant [m] with

\textsuperscript{127} The conservatism of women in Yucatan is also seen among Mayan-speakers, where rural women are preserving the Mayan language at a higher rate than are men (Güémez Pineda 1994).

\textsuperscript{128} Penny (2000) argues that the breaking of strong network ties among speakers due to migration and conquest has been instrumental to the rapid pace of change of Spanish during the medieval period (pp. 63-67). The influx of workers from outside of the Yucatan has similarly placed yucateco men in contact with other speakers with whom they share only weak ties, thereby encouraging the shift to ‘standard’ forms via accommodation and leveling.
greater frequency than men; frequency and VARBRUL analysis for [m] showed that the leaders of this change are middle and upper class women. What effect the entrance of more women into the economic mainstream will have on the future development of [m] remains to be seen.

6.8.2 The role of class in Yucatan Spanish

The manner in which class was implemented in this study may not have been fine-grained enough to allow for the precise identification of the locus of linguistic change in the socioeconomic hierarchy. Still, VARBRUL analysis consistently showed an effect for (middle)/upper class with regard to the production of Yucatan variants. Examining individual speakers along with frequency and VARBRUL analyses demonstrates that the leaders of change appear to be the children and grandchildren of lower class, Mayan-dominant households. As mentioned previously, as these speakers obtain more education and better jobs, they enter the middle class carrying with them a version of Spanish influenced by the bilingual traits characteristic of their Mayan-speaking families. Several speakers, including subject 226, an upper class, college educated, fluent Mayan-speaker, exemplify this trend. Importantly, this trend interacts strongly with age; while the middle-aged speakers preserve many of the linguistic traits of their lower class parents and grandparents, the youngest speakers, regardless of background, adhere much more to standardized pronunciations. As expected class, for older speakers, correlates strongly with knowledge of Mayan. This factor is discussed in the next section.
6.8.3 Bilingualism/Knowledge of Mayan

With regard to the influence of the Mayan language on the Spanish of Yucatan, most of the variables showed an effect based on knowledge of the indigenous language. While the goal of this study is not to analyze the possible role of language contact on Yucatan Spanish, the data do allow for some hypotheses to be made regarding this question.

First, the development of [m] has likely been influenced by Mayan. For linguistic factors, [m] was significantly more likely to appear in a final stressed syllable (cf. Table 7); these words mirror the pattern of final stress found in Mayan, and possibly arose first in words, such as place names, calqued from Mayan (i.e. Yucatán, cf. Michnowicz (in press) for more on the lexicalization of [m]). Additionally, contra Yager (1989), the present study found more [m] among speakers with some knowledge of Mayan. The difference between the two studies may lie in the fact that the locus of change appears to be non-fluent, passive speakers of Mayan; comparing only fluent Mayan-speakers to monolingual Spanish-speakers may not capture the role of passive Mayan knowledge\textsuperscript{129}. Also, Yucatec Mayan displays the same alternation of \([n] > [m]\) in absolute final position as Yucatan Spanish (Michnowicz in press, Bolles & Bolles 2001). For example, Mayan //te:n// / I may be pronounced [te:n] or [te:m] (Michnowicz in press). It is not clear if this is also a recent innovation in Mayan, but the coincidence of features

\textsuperscript{129} Yager (1989) included only two speakers with the equivalent level of ‘some knowledge of Mayan’ as implemented in this study (p. 88). This may have contributed to the lack of significant effect. Likewise, Yager appears to have run statistics only on the male speakers (p. 89). Given that [m] occurs more frequently among women in the present study, this may also have been a factor.
and the positive correlation of [m] with Mayan-speakers does suggest some influence of the indigenous language.

Next, the voiced stops (b d g) appear to show evidence of language contact. Lope Blanch (1979/1987) argues that the phonetics of Mayan has been transferred to Spanish by speakers, noting intervocalic occlusives as one possible case (p. 11). Yager (1982), discussing the phonological system of Mayan, notes that of the Spanish voiced stops, only /b/ is found in native Mayan words, while /d g/ appear only in loanwords (p. 63). Suarez (1945/1979) confirms the lack of alveolar and velar stops in Mayan (p. 53). It is clear then that Mayan speakers learning Spanish would have to add /d g/ to their phonological system, a situation that may lead to imperfect learning of the Spanish stop-fricative alternation on the part of Mayan speakers. Yager (1982), while arguing against direct Mayan influence on (b d g), does suggest a possible indirect influence favored by the high rate of bilingualism in Yucatan (p. 64). Thomason & Kaufman (1988) argue that imperfect bilingualism (in the sense that speakers are dominant in one of the languages in contact) can lead to changes in a language’s phonological/phonetic system, as speakers transfer either their native patterns or an imperfectly learned target system to the dominant language (p. 38-39). Winford (2003) lists this as one of the possible scenarios for language shift, in which a linguistic minority imposes their language on a conquered majority, producing an “indigenized” variety of the target language (p. 15). This new variety will reflect the difficulty the shifting speakers had in mastering the new language.

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130 See Restall (1997, p. 299) for a comparison of Spanish and Mayan phonological inventories.
Evidence that the stop-fricative alternation is difficult to learn for non-native speakers is found in other dialects of Spanish. For example, Lipski (1994) attests the presence of [b d g] within the Andean region (Peru p. 320 and Bolivia p. 189), and in Central America (Honduras, p. 271; El Salvador, p. 258; Nicaragua, p. 290). The Spanish of Equatorial Guinea also fails to produce the stop-fricative alternation (Lipski 1985, p. 35). Importantly, all of these dialect areas are characterized by a high rate of bilingualism. Likewise, English-speaking students of Spanish often have difficulty making the stop-fricative distinction (cf. Dalbor 1980, p. 258). Stop variants, then, appear to be preferred whenever Spanish comes into contact with a language that does not demonstrate the same stop-fricative alternation, regardless of what that language is. The high rate at which bilingualism and possible imperfect learning on the part of non-native speakers of Spanish coincide with the preference for the stop variants [b d g] suggests that this may also have played a role in Yucatan Spanish. In this way, it is not so much the Mayan language per se that has had an effect on Yucatan Spanish, but rather the bilingualism and language shift itself that led to imperfect acquisition and second language interference.

Finally, the aspiration of (k) is likely due to influence from Mayan, and [ʔ] insertion strongly correlates with the speech of fluent Mayan-speakers. Most varieties of Spanish do not aspirate voiceless stops, and Mayan possesses ejective/glottalized /p’ t’ k’/ that could have been passed to Yucatan Spanish as aspiration (cf. Suarez 1945/1979, Lope Blanch 1983/1987). If this is the case, aspiration may have been spread throughout the speech community in a manner similar to [b d g]; that is, via L2 interference from a
linguistic majority shifting to the prestige language, Spanish (cf. Thomas & Kaufman 1988). That [kʰ] correlates strongly with age but shows very similar frequencies across language groups indicates that if aspiration is due to contact with Mayan, this feature spread to monolinguals at some point in the past, and is now in the process of quickly disappearing from the dialect.

Glottal stop insertion, as the data in Table 42 demonstrate, is primarily indicative of bilingual speech, and Lope Blanch observes that hiatus across word boundaries is undoubtedly due to Mayan influence (1981/1987). Most varieties of Spanish strongly disfavor hiatus, and the insertion of [ʔ] across word boundaries is one of the markers of a foreign accent in Spanish (Dalbor 1980, p. 259). Like aspiration, [ʔ] insertion is quickly declining in Yucatan Spanish. While it seems likely that these features are likely due to direct substrate/adstrate influence, more research is needed to definitively locate the origin of these sounds in the dialect.

6.9 Results of initial hypotheses

In Chapter 1 three main hypotheses were established for this project. They are repeated here for convenience, along with briefly addressing the success of the study in confirming or rejecting the hypotheses.

*Hypothesis 1: The variables studied in this work will exhibit social stratification (class, age, gender), and are important as social markers in Yucatan Spanish.*

This hypothesis was partially confirmed. All of the variables showed stratification for gender and age, while the role of class was less clear. Thus it is not clear that all of
the variables serve to distinguish social classes, although the use of Yucatan variants does identify the speaker by age group, gender, or in the case of [m], as belonging to the local ‘in-group’ of Yucatan natives.

_Hypothesis 2: If the frequency of use for the variables in question is increasing, it is due to speakers adopting traditional Yucatan variants as markers of local identity._

As discussed above, this appears to be the case for the one variable showing an increase in frequency, [m]. This hypothesis is confirmed based on the present data.

_Hypothesis 3: Bilingualism with Mayan will correlate with a higher frequency of typical Yucatan variants._

This hypothesis is partially confirmed. While speaking at least some Mayan appeared to play a role in four of the six variables, for the remaining two ([b] and [kʰ]), the results are less clear, since they show similar frequencies across language groups. This may be due to the sampling pool of the pilot studies, and may show some effect for language in future work.

### 6.10 Limitations and areas for future research

Several limitations in the present research should be addressed in future studies. First, as mentioned previously, the binary class division in this study was not fine-grained enough to allow for the precise identification of the locus of linguistic change within the socioeconomic hierarchy. Additional research focusing on the lower and upper middle
classes might provide further insight into where the observed changes began and how they are spreading through the speech community. Second, future research should balance the subject pool for differing degrees of bilingualism. While the present study examined three levels of bilingual speech, the placement of a speaker into one Mayan language category or the other was done primarily based on the researcher’s impressions and the speaker’s self-identification. In a few cases where a speaker may have underreported their fluency in Mayan (i.e. they speak only Mayan with their parents or spouse, but self identify as passive Mayan speakers based on the fact that they speak *la mestizada* ‘the mixed (Spanish-Mayan) dialect of Mayan spoken in modern-day Yucatan’), the speaker was coded as speaking fluent Mayan. A closer examination of levels of bilingualism, along with attitudes regarding the Mayan language should be undertaken. Likewise, further research based on the language attitude pilot in this study is needed. This will allow for a better understanding of the role of identity and regional pride in language change in Yucatan. Additionally, while this study provides pilot data from aspirated (k) and glottal stop insertion, future studies should examine these variables in detail in order to confirm the preliminary results reported here. Additionally, studies of glotalizations in other phonetic contexts (i.e. C_C or #_C) are needed. Also suprasegmental features, such as intonation and stress, which early studies describe as

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131 Fluent Mayan speakers often felt that they Mayan they spoke was not ‘legitimate’, in the sense that they no longer speak the pure Mayan used by their ancestors, but rather a dialect that has been contaminated by Spanish. The following quote from speaker 210 makes this clear: “Bueno, maya decían porque muchos dicen que lo que hablamos es la mestizada, que no es la legitima maya. Bueno, eso dicen ¿no?... Pues, si yo, la maya, así así a la forma en que se habla acá, yo hablo re bien la maya” Well, they said Mayan, because many people say that what we speak is a mixed version, that it is not the true Mayan. That is what they say, no?...Well, yes I, Mayan, at least how they speak it here, I speak Mayan very well. See Briceño Chel (2002) for more on the linguistic insecurity of Mayan speakers in Yucatan.
differing from other varieties of Spanish (e.g. Barrera Vásquez 1937), as well as studies on other phenomena, such as the lengthening of stressed vowels (Lipski 1994, p. 281) deserve treatment in future work on Yucatan Spanish. Future studies are also needed to examine rural varieties of Yucatan Spanish, and how they may differ from the urban variety spoken in Mérida, which is in closer contact with other dialects of Spanish. Finally, the linguistic expression of Yucatecan identity should be studied in the context of migration of yucateco speakers, both to other areas of Mexico and to the United States, in addition to the adaptation to local linguistic norms of outsiders migrating into Yucatan. These studies will allow for a better understanding of the direction of language change in Yucatan, as well as of the role of local identity and prestige in the linguistic realization of Yucatan Spanish.
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Appendix B
Linguistic background questionnaire

Cuestionario lingüístico

Las siguientes preguntas son parte de mi investigación sobre el español hablado en la península yucateca. El cuestionario es voluntario y confidencial. Si Ud. no desea contestar alguna pregunta, déjela en blanco. Gracias de antemano por su participación.

1. ¿Dónde vive Ud. (ciudad, estado, país)? ________________________________
2. ¿Cuál es su profesión? _____________________________________________
3. ¿Cuándo nació Ud.? 19________
4. ¿Dónde nació Ud. (ciudad, estado, país)? _______________________________
5. ¿Hace cuánto tiempo que Ud. vive en o cerca de Mérida, Yucatán México? _______________________________________________________________________
6. ¿Dónde asistió Ud. a la escuela primaria (ciudad, estado)? _____________________________
7. ¿Dónde asistió Ud. a la escuela secundaria (el colegio o la preparatoria) (ciudad, estado)? ____________________________________________________________
8. ¿Ha vivido Ud. fuera de la región de Mérida, Yucatán? ¿Dónde? ¿Por cuánto tiempo? ____________________________________________________________
9. ¿Dónde nacieron sus padres (ciudad, estado, país)? ____________________________________________________________
10. ¿Qué lenguas hablan/hablaron sus padres? ____________________________________________________________
11. ¿Hay alguien en su familia nuclear (padres, hermanos, abuelos, hijos, esposo/a) que hable con regularidad una lengua que no sea el español? ¿Cuál? ____________________________________________________________
12. Sabe/conoce Ud. otra lengua que no sea el español? ¿Cuál? ____________________________________________________________
13. ¿Cuál es su nivel de proficiencia en esa(s) lengua(s)?
   1 no proficiente  2  3  4  5 muy proficiente
14. ¿Hay algo más sobre su historia lingüística que deba saber el investigador?
   _____________________________________________________________________
Appendix C
Language attitude questionnaire

Encuesta lingüística

Informe personal

Sexo: M _______ F _______
Último año de educación formal: _______
Profesión: _______
Edad: 18-29 _______ 30-49 _____  50 + _____
Lugar de nacimiento:
Años en Mérida:
Pasatiempos, diversiones, etc:

Parte I. Escoja la imagen que mejor refleja su opinión.

1. Se habla bien el español en Yucatán.

2. Me gusta el dialecto del español en Yucatán.

3. Me gusta el acento del español yucateco.

4. Uso palabras y/o frases en maya cuando hablo español.

5. Creo que el maya enriquece el español hablado en Yucatán.

6. A veces la gente se burla del español hablado en Yucatán.

7. Para tener éxito en el trabajo en Mérida es importante hablar un español “nacional” o “estándar”.

8. Los políticos en Mérida suelen hablar con un dialecto yucateco.


11. Los hispanohablantes deben expresarse sólo en español sin añadir palabras/frases mayas.

12. Hay personas en Mérida que no hablan bien el español.


14. La gente en Yucatán a veces se burla de otros dialectos del español.

**Parte II**

15. Si Ud. habla con un acento/dialecto yucateco, ¿con qué frecuencia lo usa? ¿Con quién(es) lo usa? ¿Cambia Ud. su acento dependiendo con quien está hablando?

16. Cuando Ud. escribe (cartas, informes, etc), ¿con qué frecuencia usa palabras y/o expresiones yucatecas?

17. En el trabajo, ¿con qué frecuencia intenta Ud. usar un dialecto/pronunciación “estándar”?

18. Con los familiares, ¿con qué frecuencia usa Ud. un dialecto/pronunciación “estándar”?

19. ¿Cómo responde Ud. a una persona que habla con un fuerte acento yucateco?

20. ¿Cómo responde Ud. a una persona que habla con un acento “estándar”?

**Parte III.**

21. ¿Dónde se habla mejor el español?

22. ¿Por qué?

23. Basándose sólo en el habla, ¿podría Ud. identificar a otra persona de Mérida fuera del estado?

23. ¿Qué características tendría su habla que le permite identificarlo como yucateco?
24. ¿Puede Ud. identificar a una persona de habla maya por su manera de hablar español?

25. ¿Cómo?

26. En Mérida, ¿quiénes hablan con un fuerte acento yucateco?

27. ¿Quiénes usan un acento más estándar?

28. ¿Siente Ud. más mexicano/a o más yucateco/a?

29. ¿Por qué?

30. Cuando la gente de otras partes quiere imitar a un yucateco, ¿cómo habla?

31. ¿Cómo es el habla estereotípica de Yucatán?
Appendix D

Sample transcriptions: language attitude questionnaire

**Speaker 206**

Te voy a decir algo. Los yucatecos tenemos una forma muy particular de hablar. Los yucatecos que se quedan aquí, que viven, que nacen y viven aquí, se queda. Me pasaba a mí cuando yo estudiaba fuera. Y yo llegaba a dónde estaba mi escuela, estudié en México y en la ciudad, en Chihuahua también. Y se me pegaba la forma de hablar de allá. Cuando venía yo de vacaciones a ver a mis padres, me daba risa en un principio oír hablar a la gente porque los notaba con un acento muy particular. Pero después de dos meses de vacaciones ya volví yo a agarrar los modismos y la forma, y cuando regresaba me daba cuenta porque mis amigos me lo decían. Estás hablando raro. A través del tiempo, yo me he salido mucho de aquí, y conozco toda la República, eh, he ido perdiendo a pesar de que ya vivo aquí permanentemente, pero he ido perdiendo la forma de hablar de los yucatecos muy clásicos. Mucha gente dicen no me identifican como de aquí. Porque tienen un estereotipo de, del habla yucateco. Muy marcado. De vez en cuando, pues, hay cosas que se me escapan y los digo...No lo, no lo finjo. Hablo normal, ¿verdad?...Llevo ya veinte años viviendo aquí, entonces se nota.

*Researcher question: ¿Se habla buen español en Yucatán?*

Yo creo que sí. Yo creo que aquí usamos términos que están en el Real Diccionario de la Lengua Española, que no conocen en otras partes....Pero sin embargo están correctos, y creo que se habla buen español. Y, y como un antecedente, Yucatán fue, tuvimos muy
aislados del resto del país. No tuvimos contacto. Para nosotros era más fácil tener contacto con Cuba, que fue el primer lugar que colonizaron los españoles, ¿verdad? Con Cuba o con Nuevo Orleáns, la otra parte, era más fácil para las familias de aquí enviar a sus hijos a estudiar fuera que enviarlos a México...Eh, pero no fue sino hasta los años sesentas cuando se estableció el ferrocarril del sureste que empezó a haber contacto directo con la ciudad de México. Ya antes era una odisea ir a México. Yo me acuerdo cuando, de pequeño, doce años, era yo Boy Scout, y fuimos a un Jamboree, a un campamento, cinco muchachitos yucatecos, a Tampico, en los védanos. Y fuimos en un barco. Tomamos en Progreso un barco de henequén que transportaba henequén. Y yo no sé hasta ahora cómo me dejaron ir mis papás...Pero fuimos cinco muchachos a, y era una travesía de tres días de Progreso hasta el puerto de Tampico, en el barco. Y luego para regresar por Veracruz, y estar dando pasos, para estar en una panga, esperar a veces, nunca sabías cuánto tiempo iba a durar para que, para que pudieras llegar, ¿verdad? Y agarrar un ferrocarril en...y luego ya venir aquí. Era una odisea. Eso fue en los sesentas...sólo era por barco. A Veracruz, y allá de Veracruz cruzar hasta el Distrito Federal. Así era. Entonces era más fácil para nosotros agarrar un barco, queda más cerca Cuba, ir a Cuba, y de allá Europa o...Muchos de los términos cubanos aquí, hablamos mucho de las cosas que hicieron los cubanos [su] forma de hablar. No del acento, sino palabras, el vocabulario que utilizan ellos. Pero mi pregunta [respuesta] sería que se habla buen español en Yucatán.

Researcher question: ¿Habla Ud. algo de maya?
No hablo maya. Pero hay palabras aquí que desde chico nos enseñan y que,
que a veces las decimos. Las dicen, mi mujer es de Baltimore y las dice. Sí, uso a veces
pala, expresiones, no frases pero palabras. Por ejemplo, a veces una galleta, ¿no? Eh,
estas galletas están satz. Satz, que quiere decir que ya están pasadas, no están bien. Yo
siempre digo una, aquí entre las señoras norteamericanas casadas con yucatecos como mi
mujer, hay una colonia muy grande aquí...El otro día, una plática entre ellas decían,
decía, *those cookies are very satz*. Las americanas.

*Researcher question: ¿Se burla del español yucateco?*

Yo diría que en un cien por ciento. Definitivamente cien por ciento. Sí. Sobretodo en el
Distrito Federal. Nos, inclusive cuando se refieren a nosotros lo dicen muy, tratando de
imitar a los, a los de aquí. Ha habido ciertos, eh, cómicos, ciertos yucatecos artistas
uno de ellos, si me acuerdo, se llamaba don Humberto...que en México hablaba,
ridiculizó pues, ese fue básico este señor, para que en México se les hiciera muy curioso
ridiculizar el español de Yucatán. Porque salió en televisión, en radio...Entonces ese
señor pues hizo en México muchas cosas que, que ahora piensan que todo el mundo habla
así. Definitivamente. También, otra de las burlas es, nos dicen cuando vamos a México,
todavía, aun en esto, lo dicen, ¿tienes pasaporte? Nos dicen la hermana República de
Yucatán. Porque fuimos dos veces, dos veces se separó Yucatán del resto del país.
Existe cierto resquicio a lo que llamamos huaches. Huaches le llaman a toda la gente de
México que no es de Yucatán. Un huach. Cuando vemos algo raro de Campeche para
arriba, todos son huaches. ¿Verdad? Como los Yanquis en Estados Unidos, verdad.
Efectivamente. Le llamamos los huaches, y hay muchas teorías de por qué viene la, el
nombre de huach. ¿Verdad? No sé cuál de ellas sea la buena, hay muchas.

¿Verdad? Pero huaches al, sobretodo de México. O chilangos cuando son exclusivamente del Distrito Federal... Y hay cierto, cierto resoldo, cierta aversión en Yucatán. Que ahorita ya estamos llenos de huaches,¿verdad? Ya que la ciudad, y ha cambiado todo, ha cambiado la tradición, inclusive ha cambiado la comida. Porque, por la gente que viene, pues traen sus costumbres y sus platillos y todo y ha cambiado.

Researcher question: ¿Es que el maya enriquece el español hablado en Yucatán?

Yo creo que, yo creo que el maya ya lo dijimos anteriormente, ha enriquecido el español. Entonces deberíamos de seguir como estamos ahora. Sí.

Researcher question: ¿Cree Ud. que hay personas en Mérida que no hablan bien el español?

Muchas gentes, claro...gentes que no han tenido oportunidad de ir a las escuelas, que no han tenido acceso a las escuelas, incluso gentes que, los de origen maya, pueden ir hasta a una escuela profesional, y tienen que luchar mucho para que se les quite la, la forma. O sea el, el pasar por una universidad no les quita la forma de hablar. Siempre dirán amariyu, o san-di-ya, o cosas así porque así lo aprendieron de chico. Es muy difícil. Hay gentes que no. Hay gentes que son de origen maya y han logrado superar esa barrera, pero es como una...Yo creo que definitivamente hay personas en Mérida que no hablan bien el español, sí.

Researcher question: En su opinión, ¿dónde se habla mejor el español?

Supongo que en el mundo hispano, verdad, que en España. Pues, donde se creyó. En México se habla un español bastante bien. Pero, ¿en qué parte? Yo creo que aquí en el
sur. No estoy, no estoy siendo regionalista. Pero he estado yo en varias partes
conozco el país, y y creo que aquí es donde hablamos español, más, más puro. Aquí en el
sur.

Researcher question: ¿Puede Ud. identificar a un yucateco sólo por su forma de
hablar?

Sí, sí, ningún problema. Al menos que tengan mucho tiempo, no sólo sin ningún, no
sólo por su forma de hablar, por sus modismos, por su estado físico, por sus
características físicas, algunas veces, sobretodo cuando es muy autóctono. No sé si te
ha pasado a ti que, yo veo a alguna persona, yucateco, éste es yucateco. Aunque no lo
oiga yo hablar, antes de que hable.

Researcher question: ¿Puede Ud. identificar a una persona de habla maya por su
manera de hablar español?

Sí. Por lo que decía hace un momento. Hay cosas que no se les, que no se les van
nunca, aunque cuando vengan. Son muy pocas gentes los que superan eso. Y cuando
oigo esto, me pasa mucho a mí, muchísimo en los supermercados, cuando oigo a una
persona, de esa forma de hablar, digo esta persona es de habla maya. ¿Verdad? Sí.

Researcher question: ¿Quiénes habla con un fuerte acento yucateco?

¿Quiénes refiriéndose a clases? Yo creo que todas las clases Ayer estaba oyendo a
una amiga mía, de origen alemán, que hablando con un acento yucateco que está, me
dío risa a mí. Muy fuerte. O sea no hay clases. Todo el mundo que vive aquí, que ha
vivido, que nació y todo, y habla...este, con ese acento se puede, o sea no puedo decir
los indígenas, o los de la clase media, o la clase alta, no. Todos hablamos,
cuando hablamos con acento yucateco hablamos con fuerte acento yucateco. Sí.

Researcher question: ¿Siente Ud. más mexicano o más yucateco?

Yo me siento mexicano, cien por ciento mexicano. Y soy segunda generación en el
país, mi mamá es primera generación...y me siento muy mexicano, pero me
identifico, me siento yucateco. Dentro, dentro, dentro, me da orgullo ser yucateco.

Cuando estoy en el extranjero, y veo a alguien, me pasaba, pues estaba en la escuela y
llegaba alguno yucateco, sentí un especial interés, un especial afecto por esa persona.

Por sólo el hecho de venir de Yucatán. Así me identifico mucho con Yucatán...

Speaker 221

Researcher question: ¿Puedes identificar a otra persona como yucateca por su manera
de hablar?

...con que digas cualquier co...sí con con con el acento se nota por aunque quieres
disimular no se puede sí (rq) porque este es lo que te identifica creo que ninguna otra
parte de la República habla así...

Researcher question: ¿Crees que se está perdiendo la manera de hablar de aquí?

Pues yo sí yo creo...porque sí poco a poco se va perdiendo o sea yo veo como hablan mis
abuelos como habla mi mamá luego como hablo yo y mis amigos y la gente más chica y
si poco a poco hay cosas que se van perdiendo que ya no uso muchas cosas que ellos sí
usan aunque sé qué quieren decir...sí definitivamente lo hace único diferente al resto de la
República...porque hablamos así como que aporreado...aporreado o sea como se marca
más o sea el acento no sé la pronunciación pero allá en o sea en cualquier otra parte de la República es un poquito más cantado....

Researcher question: ¿Se burla del español yucateco?

Sí y sí se burlan o sea la...sale a veces en la tele en los canales de tele nacional cuando hay algún personaje yucateco, maré la hacen aporreado... sabe que es yucateca sí en seguida la identifica a pues sí

Researcher question: ¿Cómo?

Pues por lo mismo el acento aunque no usen palabras en maya pero lo lo marcamos más es un español más más sí como el maya es muy fuerte o sea las palabras todas son agudas todas...entonces el español es así o sea por aprendizaje por lo que sea...aporreado este y ya el náhuatl es más cantado por eso el centro de México los aztecas que hablan náhuatl es más cantado es más suave todo eso...por eso

Researcher question: ¿Quiénes hablan con un fuerte acento yucateco?

En Mérida ¿quién será? Así en general creo que todos hablarían en parejo pero se da mucho entre jóvenes entre grupos de amigos entonces ya todo hasta a propósito lo hacen o sea que te estás llevando con ellos y estás jugando o estás hablando o sea a propósito este marcas más tu acento...

Researcher question: ¿Te sientes más mexicana o más yucateca?

Creo que más yucateca. Pues creo que este pues...creo que es por cultura o por cultura por historia y por todo lo demás estamos muy separados de la República y siempre siempre siempre desde la conquista en México desde todo lo demás siempre nos habían hecho un lado. Para empezar Yucatán era autónomo o sea se quería separar hasta bandera tenemos
...el único estado que tiene bandera y hace poco sería mucho de que se puso de moda todos los carros tiene su bandera en Yucatán camisetas tengo mi camiseta mi gorra y sí te sientes un poco aparte de lo que es centro ya no tanto por lo de los medios de comunicación y todo claro se va perdiendo...pero sí es es más Yucatán aparte sí me siento más yucateca que mexicana definitivamente entonces mexicanos son el centro de la República...

**Speaker 227**

*Researcher question: ¿Cómo ha cambiado la ciudad?*

...en el sentido de que mucha gente de fuera de otros estados, México, Guadalajara, del norte de la República, ha venido a vivir acá. Vienen de paseo una vez y les gusta la ciudad y por ejemplo los, distrito federal México distrito federal ya ves que ahorita hay mucha inseguridad en la ciudad, muchos secuestros, robos, asaltos entonces mucha gente viene huyendo de eso. Y les gusta Mérida porque ya la conocían, y deciden venir a vivir acá, poner un negocio. Hay muchos también, este, gente funcionarios de oficinas del gobierno que los cambian acá.

*Researcher question: ¿Y qué efecto ha tenido este cambio?*

¿Qué efecto? De que este haya mucha población, haya mucho tránsito mucho tráfico, mucho, vehículos, muchos negocios nuevos, comercio. Hay más comercio, hay más plazas comerciales, más cines, más de todo. A mayor gente allí tienes que ampliar tus servicios en la ciudad...sí sí tranquilidad sí así es así es aquí ves tú que conoces puedes, está cerca la playa muy bonita, está la playa sobretodo en tiempo de verano es cuando
está más bonita, está cerca Cancún, a cuatro horas y ya estás en Quintana Roo
en la Riviera maya y estás muy bien conectado con los Estados Unidos, a Miami está en paso...
entonces es una ciudad muy bien conectada, muy bonita, muy tranquila todavía.
Esperemos que siga así (rq)

*Researcher question: En tu opinión, ¿se habla buen español en Yucatán?*

...que se habla bien, yo diría que sí. Mejor que en otros estados de la República...que aquí, este, no nos comemos como ocurre en Tabasco o en Veracruz un poco menos, no pronuncian la ese que es tan importante a nuestro idioma, y a veces en España los españoles hablan así...entonces, este, aquí pronunciamos muy bien la ese, tenemos palabras que sólo en España se usan, es un español cien por ciento puro... pues te digo que aquí hablamos un español muy castizo. España. Castilla.

*Researcher question: ¿Te gusta el dialecto hablado en Yucatán?*

Sí, sí me gusta mucho. Sí, porque mezclamos el español con la maya, con la lengua maya entonces tú puedes conversar con otro yucateco en México y mezclar el español con muchas palabras mayas y los de allá no te van a entender. O van a decir ¿de qué, de qué hablan? ¿Qué estás diciendo? No te entienden. Sólo entre los yucatecos nos entendemos...me gusta el acento del español yucateco. Sí. Sí me gusta. Nos distingue de toda la República.

*Researcher question: ¿Usas palabras o frases mayas cuando hablas?*

Cuando hablo español, sí con frecuencia ¿verdad? Usamos, mezclamos palabras, alguna palabra maya. Casi diario mezclamos alguna maya palabra, sí aunque sea una vez al día
la decimos...yo digo mis palabras mayas. Sé que no me va a entender yo le
digo esto quiere decir esto. Ah sí, sí, sí. Se empiezan a reír...porque muchas palabras
mayas que ejemplifican mejor lo que queremos decir como por ejemplo, ¿qué te diré?
Entendemos mejor la palabra maya que una en español aunque la sepamos también.

*Researcher question. ¿Se burla del español yucateco?*

Pujado quiere decir que con este acento que te estoy haciendo, o sea como parando así,
muy, con mucho acento muy fuerte y en, en toda la República, en todos los demás
estados no. Ellos tienen otros acentos pero él de nosotros es muy característico, que lo
toman a burla, nos burlan de nosotros allá pero no nos interesa. No nos importa.

*Researcher question: ¿Puedes identificar a una persona de habla maya por su manera de
hablar español?*

Yo sí. No pronuncian por ejemplo la letra ll, la doble l, por ejemplo mantequilla así sé
decir mantequilla los de pueblo dicen mantequia, quia. Como ustedes pero ustedes porque
su acento es de allá. Mantequía, cuchio. No está bien...la doble ele les da trabajo te das
cuenta que es o gente del pueblo o que los papás fueron de pueblo, aunque sea educada
eh. Yo he oído a profesionistas que siguen hablando porque sus padres o porque allá
nacieron de niños aprendieron allá el español. Sí generalmente, sí. O fueron criados por
nanas, las nanas que fueron mestizas y les hablaban.

*Researcher question: ¿Y sigue esto de las nanas hasta hoy en día?*

No. Eso ya es de gente mayor. Por ejemplo mi mamá tiene un tío que con fueron once,
diez hermanos, más tres casi adoptivos de mis bisabuela. Ese nene lo crío una nana, una
mestiza y hasta ahorita mi tío Alfredo habla la maya. ¿Por qué? Porque lo aprendió de su nana mestiza, hablaba más la nana lo tenía más tiempo que su mamá y papá. Ahorita ya no. Ahorita las nanas ya casi no hay y casi todos ya no saben la maya. Por ejemplo...la muchachita que nos ayuda en la casa sabrá un poco pero no como sus papás o sus abuelos...

Researcher question: ¿Prefieres el español hablado en otras partes de México al dialecto yucateco?

¿Prefiero el español hablado en otras partes de México al dialecto yucateco? No. No, porque yo estoy muy orgullosa de mi, de mi acento español, de mi acento yucateco de Yo siempre hablo como he aprendido hablar. Nunca intento cambiar mi acento porque voy a hablar con una persona de fuera porque voy a intentar parecer a alguien de otro estado de la no, no, yo no...

Researcher question: ¿Dónde se habla mejor el español?

¿Dónde se habla mejor el español? Yo pienso que aquí en Yucatán y, en México en general en México...

Researcher question: ¿Puedes identificar a otro yucateco sólo por su manera de hablar?

Sí, inmediatamente. Cualquier persona que no sea de acá si tú estás viajando por la República y tú eres yucateco al pronunciar, aunque digas buenas tardes ¿de dónde es usted? ¿de Yucatán?, si te dice, ¿cómo lo supo? Por su acento...con las primeras palabras sí, sí lo sé y yo sé de dónde más o menos los acentos si es del norte si es de México DF, si es por allí de Veracruz o por Guerrero, la ese la Tabasco este chica era de Tabasco...

Researcher question: ¿Sientes más mexicana o más yucateca?
Creo que más yucateca. ¿Por qué será? Porque los yucatecos somos muy regionalistas no sé si por aquello de a guerra que quisimos ser república independiente, nos queda algo de esa época, del siglo mil ochocientos o mil setecientos creo. El siglo diecinueve pero nos sentimos muy orgullosos de ser yucatecos y antes de ser por ejemplo de si tú estás en el extranjero y te preguntan de dónde eres yo no digo soy de México porque yo México lo identifico con la ciudad de México DF. De Yucatán, y si veo que no saben dónde está Yucatán, Yucatán en Mérida, Yucatán, en México...claro estamos orgullosos de ser mexicanos en general pero creo que los yucatecos nos sentimos más orgullosos de ser de Yucatán porque mucha gente de la República nos quiere y nos considera una raza...sí así es pues antes de ser mexicano soy yucateco, después mexicano.

**Speaker 230**

*Researcher question: ¿Se habla buen español en Yucatán?*

En Yucatán se habla mucho la lengua maya y muchas personas generalmente de estrato social bajo están familiarizadas a, a, a pues a palabras de origen maya y lo mezclan con el español y eso puede ocasionar ciertos, ciertos problemas ¿no? de entendimiento...aparte de lo que es la, la estructura de los idiomas así que se mezcla a veces y se hablan mal pero hablando de un nivel socioeconómico medio o medio bajo para arriba yo siento que el español es muy bueno.

*Researcher question: ¿Y te gusta el dialecto aquí?*

Me encanta. Es lo mejor, lo mejor. Yo siento que, este, hasta mucha gente de, del resto del país diferencian la forma de hablar de los yucatecos del resto del país. Se burlan mucho del ‘maré chiquito cómo está esto maré’, y nos catalogan así,
y es muy cómico porque la forma de hablar de del yucateco con acento es muy chistosa. Parece eh no sé es, es un acento muy chistoso, muy alegre, muy risueño y al mezclarlo también con palabras mayas y todo pues da risa y es muy agradable...nos da mucha gracia que gente del exterior no las entiende y nosotros nos reímos...claro por ejemplo decimos mucho los yucatecos en vez de decir ‘cuidado’ decimos ‘dao, dao, dao niño, allí viene el camión, así es que te van a machucar’ en vez de de atropellar o o pasar encima dicen atropellar. Machucar. ¿Te has comido el xix de las galletas? El xix es el polvo, te queda de las galletas...las migas. Este nosotros con decir polvo de galletas decimos el xix ...si yo siento que le da un poco más de profundidad. El español es un idioma muy completo, es un idioma muy rico pero aparte el maya, el maya no es una lengua, el maya es un idioma. Llega a esa categoría. Tiene, tiene una estructura gramatical de verbos y enriquece mucho lo que es el español porque palabras que no existen a veces en español o que son muy completas las tomamos nosotros en maya y nos deja un idioma muy colorido, muy rico...

*Researcher question*: ¿Se burla del español hablado en Yucatán?

Siempre se burlan, siempre se burlan. Especialmente del centro de México, los huaches se burlan mucho del yucateco. Nos toman como, como simplones como ingenuos...rurales

*Researcher question*: En tu opinión, ¿dónde se habla mejor el español?

Dentro de, el español, yo siento que en México el español es, es, es muy rico y se habla mejor y se entiende mejor....decía ¿dónde se habla mejor? Posiblemente en las regiones del, del sur, del sureste de México. Yo siento que acá se habla de una forma muy, muy,
muy clara, muy fácil de entender. Yo siento que en cualquier lado de, de, de la
República nos pueden entender bastante bien, a diferencia de, de a nosotros entender a
otros es muy difícil...y pues el acento yucateco yo siento que es muy claro. Se habla
fuerte generalmente. En cambio los otros acentos pues son, son difíciles. El acento
chilango es muy, muy difícil, muy difícil...sí no, no se entiende...

Researcher question: ¿Sientes más mexicano o más yucateco?

Me siento más yucateco, porque eh lo que pasa es que Yucatán, generalmente ha sido
muy cerrado y no tiene mucho tiempo que empezara que llegar gente de, de otros lados a,
avivir acá. De hecho fue en 1985 que hubo un terremoto muy fuerte en la ciudad del DF,
pues mucha gente empezó a, a emigrar a otros estados de la República para buscar
tranquilidad, y fue cuando empezaron a llegar gente, pues chilangos con familiares de
otros estados, y fue cuando empezamos a tener contacto con gente de sí igual de México
pero de otros estados. Pero a mí me tocó muy tardío a mí me tocó desde que estuve muy
chiquito tener puros amigos yucatecos, este, haciendo cosas de yucatecos, actividades
yucatecas y, y pues yo siento que estoy más apegado a eso, ¿no? Yo siento que si me
fuera a otro, a otro, este, a otro país, extrañaría la comida yucateca primero que nada. La
comida y mi gente de Yucatán.
## Appendix E:
Sample Spreadsheet coding: (d)*

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* For Variants, f = ‘fricative’ (i.e. [+ cont]), s = ‘stop’.
crucero de f o e M y O x
Cholul y hasta
que llegue a
XX pueblo (rq) pues ahora está bastante bien
de s N e M n O x
antes era un pueblo así muy abandonado s N o M n V x
abandonado f A o M y V a que digamos f e i M y V x
porque no tenía ni parques no tenía nada f A a M y N x
era era
| de | s | O | e | M | y | P | x | ( | sOeMyPx | FSL2 | (sOeMyPxFSL2 | de | f | s | e | M | n | P | x | ( | fseMnPx | FSL2 | (fseMnPxFSL2 | berdad | f | r | A | M | n | N | x | ( | frAMnNx | FSL2 | (frAMnNxFSL2 | berdad | f | A | C | M | n | N | x | ( | fACMnNx | FSL2 | (fACMnNxFSL2 | de | f | a | e | M | y | P | x | ( | faeMyPx | FSL2 | (faeMyPxFSL2 | bolando | s | N | o | M | n | V | x | ( | sNoMnVx | FSL2 | (sNoMnVxFSL2 | parando | s | N | o | M | n | V | x | ( | sNoMnVx | FSL2 | (sNoMnVxFSL2 | de | f | o | e | M | y | P | x | ( | foeMyPx | FSL2 | (foeMyPxFSL2 | de | s | N | e | M | n | P | x | ( | sNeMnPx | FSL2 | (sNeMnPxFSL2 | abandonado | s | N | o | M | n | V | x | ( | sNoMnVx | FSL2 | (sNoMnVxFSL2 | abandonado | f | A | o | M | y | V | a | ( | fAoMyVa | FSL2 | (fAoMyVaFSL2 | digamos | f | e | i | M | y | V | x | ( | feiMyVx | FSL2 | (feiMyVxFSL2 | nada | f | A | a | M | y | N | x | ( | faaMyNx | FSL2 | (faaMyNxFSL2 | grande | s | N | e | M | n | A | x | ( | sNeMnAx | FSL2 | (sNeMnAxFSL2 | de | f | s | e | M | n | P | x | ( | fseMnPx | FSL2 | (fseMnPxFSL2 | de | s | L | e | M | n | P | x | ( | sLeMnPx | FSL2 | (sLeMnPxFSL2 | de | s | 0 | e | I | n | P | x | ( | s0eInPx | FSL2 | (s0eInPxFSL2 | de | s | 0 | e | I | n | P | x | ( | s0eInPx | FSL2 | (s0eInPxFSL2 | costado | f | A | o | M | y | N | x | ( | fAoMyNx | FSL2 | (fAoMyNxFSL2 | de | f | o | e | M | y | P | x | ( | foeMyPx | FSL2 | (foeMyFxFSL2 | donde | s | A | o | M | y | O | x | ( | sAoMyOx | FSL2 | (sAoMyOxFSL2 | donde | s | N | e | M | n | O | x | ( | sNeMnOx | FSL2 | (sNeMnOxFSL2 | ruedo | f | E | o | M | y | N | x | ( | fEoMyNx | FSL2 | (fEoMyNxFSL2 | de | s | a | e | M | y | P | x | ( | saeMyPx | FSL2 | (saeMyPxFSL2 | días | f | e | I | M | y | N | x | ( | feIMyNx | FSL2 | (feIMyNxFSL2 | de | s | 0 | e | I | n | P | x | ( | s0eInPx | FSL2 | (s0eInPxFSL2 | de | s | N | e | M | n | P | x | ( | sNeMnPx | FSL2 | (sNeMnPxFSL2 |
James Casimir Michnowicz: Vita

EDUCATION

The Pennsylvania State University, University Park, PA • 2006
Ph.D. in Spanish Linguistics
Specialization: Variation and sociolinguistics; dialectology
Dissertation: “Linguistic and Social Variables in Yucatan Spanish”
Director: John M. Lipski

Ohio University, Athens, OH • 1998
M.A. in Spanish
Areas of Study & Examination: Literature, Linguistics, and Pedagogy

Ohio University, Athens, OH • 1996
B.S.Ed. in Spanish Education, Summa cum Laude
Student Teaching: Marietta Senior High School, Marietta OH

AWARDS

The Pennsylvania State University, University Park, PA:
Research Awards
- Awarded Sparks Fellowship for teaching release • Spring 2006
- Received a competitive dissertation grant from the College of Liberal Arts for dissertation release time • Fall 2005
-Received a $1600 competitive dissertation grant from the College of Liberal Arts for travel and study in Yucatan, Mexico • Fall 2004

Teaching Awards
-Department of Spanish, Italian, and Portuguese Teaching Excellence Award • 2004

The University of Virginia’s College at Wise, Wise, VA:
- Buck Henson Student Life Award; Awarded to one faculty member per year for outstanding contributions to student life • 2000

Ohio University, Athens, OH:
- Outstanding Graduate in Spanish Education • 1996
- Phi Beta Kappa • 1996