Code-switching behavior in Antonito, CO and Phoenix, AZ

A Comparative Study

by

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ABSTRACT

The subject of bilingual language use in the southwestern United States has been widely researched. However research pertaining to the Phoenix Metropolitan area is lacking. Studies have shown that language choice is governed by linguistic as well as social constraints (Gumperz, 1977; Poplack 1980; 1981). This study examined and compared the code-switching behaviors of two communities in the southwestern United States: Antonito, Colorado and the Phoenix Metropolitan area in Arizona. The study explored the social and linguistic factors that are said to govern code-switching behaviors such as the type of switches made (intra-sentential or single lexical switches), the position in the utterance where the switch occurs (final or other), the direction of the switch (an utterance beginning in English and ending in Spanish, or beginning in Spanish and ending in English), the gender and level of education of the participants (college or above; high school or below), the ethnicity of the interviewer (Anglo or Hispanic), as well as which of the aforementioned social and linguistic factors most favored intra-sentential switches.

The study used corpus data, with four participants from each community for a total of eight interviews. Participants from each corpus were selected to control for gender, the highest level of education achieved and the ethnicity of the interviewer. The study found that in the corpora looked at, linguistic factors such as position of the switch and direction of the switch affected intra-sentential switches more than social factors, although in terms of frequencies within individual factor groups, social factors such as the ethnicity of the interviewer, and the participant's level of education were found to be significant in affecting code-switching behavior.

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Chapter 1

INTRODUCTION

Overview

In situations of prolonged contact between two languages and two cultures, the interconnecting of the two linguistic systems becomes inevitable, providing the bilingual speaker with an enhanced linguistic repertoire, or two 'codes' to choose from. Code-switching is a bilingual phenomenon characterized by the simultaneous use of two languages in one discourse. In order for such an alternation to be possible, several linguistic constraints must be adhered to (Poplack, 1980). In addition to linguistic constraints, code-switching is also governed by a series of social factors including (nut not limited to) gender, age, level of education and perception of language prestige (Gumperz, 1977; Poplack, 1980; 1981). Code-switching in bilingual speech has been studied and classified under various linguistic and social theories including language mixing, borrowing, calquing, and code-switching (Pfaff, 1979). Gumperz, (1977) defined code-switching as the "juxtaposition of passages of speech belonging to two different grammatical systems or sub-systems within the same exchange" (p. 1).

While the majority of the literature on Spanish language alternation in the United States concentrates on Mexican and Chicano Spanish (Valdés, 1981; Zentella, 1981; Floyd, 1982; Rivera-Mills, 2010; Jenkins, 2010), the Phoenix Metropolitan area is grossly underrepresented in the literature. This study will examine the code-switching behavior of residents of Mexican descent in Phoenix and will compare the results with another southwestern community, Antonito CO, to see if and how their code-switching patterns coincide. Along with extra-linguistic factors such as gender, level of education,

and ethnicity, the study will also examine the role of linguistic factors on code-switching as described by Poplack (1980; 1981), i.e., the *equivalence constraint*, which states that an alternation can only occur at a point in the discourse where both languages are syntactically similar, and the *free morpheme constraint,* which states that switches cannot occur between a free and bound morpheme, unless there has been a phonological integration into the second language, or unless the word is a *loan word.* Loan words or *lexical borrowings* are defined as "the incorporation of a lexical item from one language into another, with only the recipient system operative" (Poplack & Meechan, 1998, p. 129). Poplack & Meechan (1998) go on to affirm that when an item does not display the morphology or phonetic forms of the recipient language, it is then considered a code-switch.

Statement of the Problem

This study will analyze conversational code-switching as defined by Gumperz (1977) and Poplack (1980). The work seeks to examine the patterns of code-switching in the Spanish speaking communities of the Phoenix Metropolitan area in Arizona and Antonito, Colorado to see if and when they intersect and also how they differ in respect to extra linguistic factors such as gender, education, and the ethnicity of the interviewer as well as linguistic factors such as the position of the code-switch within the utterance, and the direction of the switch (Spanish→English; English→Spanish). The study also seeks to examine if linguistic or extra linguistic factors are more significant in determining what causes an instance of code-switching in the discourse of Southwestern bilinguals.

Chapter 2

THEORETICAL BACKGROUND

In her 2004 paper titled *Code-switching,* Poplack examined the treatment of code-switching in the literature as a linguistically and socially governed phenomenon. She enumerated the different theories that have defined code-switching in the literature from earlier definitions that asserted that code-switching was a 'random and deviant' behavior to the more current definitions that accept code-switching as a grammatically constrained linguistic phenomenon, that indicates a high level of bilingual competence. According to Poplack (2004), the first accounts of code-switching described it as a behavior governed by a 'favoring of syntactic boundaries which occur in both languages' (p. 2). The author discussed the equivalence constraint, which states that code-switching can only take place at a point in the discourse that will not violate the prescriptive grammars of either language, and the functional head constraint, which states that the choice of language is governed by both functional and lexical rules, prohibiting code-switching from occurring at a place in the discourse where either one would be violated.

Poplack (2004) also distinguished between code-switching and lexical borrowing. A code-switch and a lexical borrowing differ in that lexical borrowings are "established loanwords [that have assumed] the morphological, syntactic, and often phonological identity of the recipient language. They tend to be recurrent in the speech of the individual and widespread across the community" (p. 4). Therefore, loanwords cannot be considered code-switching because the morphology, syntax, and phonology of the donor language are not changed.

This study will use Poplack's (1980; 1981; 2004) and Gumperz's (1977) definitions and parameters in dealing with code-switching. With that in mind, it is stated that code-switching behavior is governed by linguistic, and social constraints (Gumperz, 1977; Poplack, 1980; 1981). *Code-switching* is defined by Poplack (1980) as "the alternation of two languages within a single discourse, sentence, or constituent" (p. 583). These alternations are controlled by social factors such as age, sex, ethnic identity, and educational level, and as well as linguistic constraints. Poplack defines these linguistic constraints as "grammatical rules" that govern language alternation based on "acceptability judgments" garnered from the grammar norms of the community (p. 585).

The *equivalence constraint* states that a code switch will occur at a point where there will be no violation of the grammatical rules of either the donor or recipient language. At this *equivalence point* an alternation can occur. For instance, in the utterance *todos los días tomo el **bus** (every day I take the bus)* respects the equivalence constraint because a noun in English was used where a noun in Spanish would also be found. A switch such as *ella no quería comprar una fea **shirt** (she did not want to buy an ugly shirt)* would then violate the equivalence constraint because of the use of English adjective placement (adjective before the noun) in a Spanish sentence, where the noun should come before the adjective. The *free morpheme constraint* states that a code switch cannot occur between a bound and a free morpheme. For instance, a bound morpheme in Spanish such as gerund ending *–ando* cannot link onto an English root, meaning that a "switch" such as DANCE-ando cannot occur (Poplack, 1980).

Lexical borrowings, or established loan words (e.g., *renta, troca, and chequear)* have been incorporated into the recipient language and keep only the recipient's

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grammatical system operative (Poplack & Meechan, 1998). Poplack and Meechan (1998) emphasize that code-switching is *not* borrowing. The alternations seen in code-switching display a dominance of *both* linguistic systems, where the switches maintain the rules of their respective languages, respecting the equivalence constraint. Gumperz, (1977) asserted that borrowings are "treated as part of the lexicon, take on its morphological characteristics and enter into its syntactic structures," whereas code-switching "relies on the meaningful juxtaposition of what speakers must process as strings formed according to the internal syntactic rules of two distinct systems" (p. 6).

Gumperz (1977) also distinguished between conversational code-switching and diglossia. Diglossia is situation specific (where different social situations and settings, i.e., home or work require the use of different varieties) and only one code is used at a time, for example a child speaking English at school and with friends and reverting to Spanish at home. In conversational code-switching both codes are used simultaneously within the same speech act (the same child interchanges between Spanish and English no matter where they might be). The speaker is often unaware of which code is being used at a given time because the selection of linguistic alternates is an automatic response (Gumperz, 1977). According to Gumperz (1977) "[speakers] build on their own and their audience's abstract understanding of situational norms to communicate metaphoric information about how they intend their words to be understood" (p. 3).

Poplack (1980) has documented that there is more than one structure that can be observed in code-switching behavior. The author distinguishes between intra-sentential code-switching and tag and single noun switches. *Intra-sentential switching* is the act of changing an entire segment of speech within the speech act itself. In this case, the entire

segment and everything else that surrounds it must "conform to the underlying syntactic rules of two languages which bridge constituents and link them together grammatically" (Poplack, 1980, p. 589). Participants A and B below serve as examples from the Phoenix and Colorado corpora respectively.

> **A (Female 1):** Um, they're really nice, *muy bonitos tienes como una*
> *separación y tiene su propio cuarto…*
> (very pretty, you have like a separation and you
> have your own room...)
>
> **B (Female 2):** [T]opamos allí dónde sea, y comemos y um, comienzan a,
> ah, correr los los a, caballos, y *ah, we do a lot as a family…*
> (We stop there, wherever and eat and um, the, the horses
> start to run,)

On the other hand, *tag and single noun switches* are "freely movable constituents which may be inserted almost anywhere in the sentence without fear of violating any grammatical rule" (p. 589). Poplack goes on to assert that the latter have been found to be the most frequent variety, and goes on to assert that they "are often heavily loaded in ethnic content and would be placed low on a scale of translatability" (p. 589). Participants C and D below from the Phoenix and Antonito corpora respectively serve as examples:

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C (Female 2): Yo tomé la carrera técnica de *business management so,*

 tenía mis clases en la mañana de normales…

(I chose the technical career of business management so,

I had my normal classes in the morning...)

D (Female 2): Se me hace que una trabaja por cuidándole la gente de no

está en el *headstart.*

(I believe that one of them worked for taking care of the

people not in headstart.)

Though there are many theories that attempt to explain what code-switching is and why it is likely to occur in bilingual speech, this study will utilize and build upon the definitions and theories of code-switching as set forth by Gumperz (1977) and Poplack (1980). The study will examine both intra-sentential code-switches and single noun or tag switches (from here on referred to as lexical switches) and the effect of social and linguistic constraints on this behavior.

Chapter 3

REVIEW OF THE LITERATURE

Code-switching has been widely studied as a phenomenon under many different hypotheses. Often, different authors will classify the same or similar aspects under different names. Poplack (1980) quantitatively examined the speech of twenty Puerto Rican residents of a bilingual community of both fluent and non-fluent bilinguals in linguistic and extra-linguistic contexts, examining whether or not their code-switching was evidence of bilingual competence or of a deviant linguistic behavior. Rather than restrict the analysis to either social or linguistic factors, Poplack included both in the study in order to be able to more richly describe the phenomenon. The data were collected through group membership participant observation techniques and more formal sociolinguistic interviews. The study concluded that both the free morpheme and equivalence linguistic constraints and extra-linguistic factors (age, sex, education, bilingual ability etc.) affected the variability of code-switches. Through these findings, Poplack asserted that code-switching behavior may be used to measure bilingual ability, and is therefore not a deviant behavior, but rather an indicator of bilingual competence. Poplack also reported that women code-switched (specifically intra-sententially) at much higher rates than men. The study did not address other languages with fewer syntactic similarities (e.g. Hebrew and Spanish) which might threaten the equivalence and free morpheme constraints, nor did the analysis provide any insight on the participation of the informants in creating the linguistic environment in which the alternations occurred.

Gumperz (1977) focused on the specific mechanisms behind code-switching that convey meaning and the relationship of these mechanisms to the social and linguistic

constraints that are said to govern code-switching. Gumperz compared three cases of prolonged language contact (Slovenian and German; Hindi and English; and the Spanish of the Southwest and English) and determined that in all three cases, all instances of code-switching served a similar purpose: quotations, addresses specification, interjection, repetition, clarification, and personalization versus objectification of an action.

Poplack (1981) investigated the different frequencies of code-switching in interactions between members of the same ethnic community and with a nonmember, focusing on the different linguistic configurations of the switches in both situations. Poplack stated that in the past the general query concerning code-switching had been why and where; this study examined those two issues as one; i.e. where is the switch *more likely to occur and why* (1981). The data consisted of recorded interviews and conversations by an in-group member with the informants in four different sessions, each one serving a specific purpose. The first was a formal interview where the participant responded orally to questions about language attitude and bilingual ability, the second was informal and guided by the participant, the third was in a street setting while the participant ran errands, and the fourth was a conversation with a passerby. An in-group member, known to both the informant and the researcher, collected all of the data. The data were analyzed quantitatively and demonstrated that both the frequency and the type of switch (single-noun switching or intra-sentential switches) vary with the ethnicity of the interlocutor. The study provided further evidence that code-switching is a sign of skill and competence in two languages, which is governed by rules common to both, showing respect for the equivalence constraint. The data analyzed quantitatively in this study could have proven even more useful if the conversations between the participants and the

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interlocutors had been further examined. The in-group/out-group dichotomy of traditional code-switching studies is ever-present in this study; however, the question that remains unanswered is *how* those groups were formed in the first place.

Like Poplack (1980, 1981) Berk-Seligson (1986) also studied linguistic constraints on intra-sentential code-switching in bilinguals. The study examined the validity of three linguistic constraints of code-switching: equivalence of structure constraint (equivalence), size-of-constituent constraint (constituent) and the free morpheme constraint (morpheme) by examining Spanish and Hebrew, two languages that are not as syntactically similar as the frequently studied English and Spanish languages. Berk-Seligson (1986) studied working-class Judeo-Spanish speaking communities in Jerusalem mostly gathering data from members of a community recreation center. The study found that the equivalence and constituent constraints are, in fact, not universally applicable, in contrast to what the literature to date had suggested. The author asserted that the equivalence and constituent constraints must be modified to describe only languages with *semi-equivalent syntaxes*. On the other hand, the free morpheme constraint proved to be the most sound in demonstrating bilingual competence in the case of Hebrew and Spanish bilinguals.

Floyd (1982) looked at the rate of Spanish retention in a corpus of Chicano university students in Colorado through language competency tests, questionnaires about bilingual ability and demographic information. The study concluded that English was the dominant language and in three cases studies Spanish retention was tied to the home and family setting between parents and children. According to Floyd (1982), these results support the conclusions that there is, in fact, an intergenerational shift from Spanish to

English among the Chicano speakers of this region and that this movement acts independently of the geographic constraints of Colorado.

Silva-Corvalán (2001) discussed the role of gender in linguistic variation. The author contended that male and female speech patterns are bound to differ. This 'linguistic inequality' reflects a larger and yet less publicly acknowledged social inequality where male members of a society have more social leeway than their female counter parts, and this imbalance of power bleeds into their linguistic patterns of behavior. The author proposed that different patterns of communication among men and women are to be universally expected, as gender stratification is a universal cultural trait. It is therefore acceptable for the 'rules' to be different from one gender to another, and furthermore, it acceptable and somewhat expected that men would break these rules while women are expected to adhere to them. From this, it can be inferred that women use the more standard or 'correct' linguistic norms when communicating, and therefore will switch from one language into another in order to avoid speaking 'incorrectly'. It is seen as better to switch than to 'misspeak'.

In a similar vein, Cashman's (2005) study on language preference examined the relationship between conversational code-switching, and social structure and identity. The author analyzed spontaneous conversation data acquired through participant observation in a senior citizens' day center Bingo (*Lotería)* game between "Anglo" and "Latina" women. Through an ethnomethodological perspective of identity, Cashman concluded that participants 'talked into being' social and linguistic structures and identities, rather than following an 'in group/out group' dichotomy. The data showed that language was used as a resource according to the circumstances presented and did not

constitute an identity or practice that is intrinsically followed. Cashman did not address other extralinguistic factors for comparison such as the gender and the age of the subjects, which might affect social identification strategies and tendencies. The study is descriptive, and yet lacks adequate definitions of key terms such as "Latina" and "Anglo." Also, being purely descriptive, it does not address linguistic constraints that might have affected the language choices of the participants.

Zentella (1981) examined code-switching behavior in bilingual Puerto Rican children in a bilingual classroom setting. The author began by pointing out that adequate comparisons of code-switching studies are hindered by differences in methodology, definitions, and units of analysis. Zentella (1981) undertook three main issues in the study: the difficulty of comparing the research already done due to the aforementioned conditions, the limited availability of a Puerto Rican sample in the literature, and the lack of attention paid to the code-switching patterns among children, teachers, and researchers from the same bilingual community. The data were collected through participant observation in two bilingual classrooms along with interviews of both teachers and students over a four-month period. The interviews were conducted in both English and Spanish, with the language of the interview being switched mid-way by the researcher. The data showed that older children might choose to speak in a language of their preference if they are assured that the addressee speaks it as well, even in a more formal interview setting. Curiously, students were permitted to code switch in some classes (such as math) and reprimanded for it in others (Spanish and English language arts). The author concluded that though the data proves that code-switching is not a random behavior and is subject to constraints, the study is limited in its holistic scope. Zentella

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(1981) stated that the description provided is inadequate for the scope of the phenomenon, and that this can only be achieved through a more ethnographic approach to account for all of the exchanges governed by individual social factors.

Toribio (2001) determined that although code-switching is indeed rule governed, bilinguals are not explicitly taught how to code-switch. The author stated that like monolingual speakers of English and Spanish, bilinguals are able to rely on 'unconscious principles', which aid them in distinguishing between acceptable and unacceptable code-switching. Toribio (2001) is in agreement with Poplack (1980) that switching between two languages will occur readily in languages that are typologically related, such as English and Spanish. Code-switching is facilitated by the surface morphological uniformities shared by English and Spanish.

In her study Toribio sought to determine if the functional head constraint (which states that code-switching cannot occur between a functional head and its complement) was a major characteristic of code-switching behavior. The study determined that the functional head constraint was indeed a characteristic of code-switching, much like the equivalence and free morpheme constraints.

Valdés (1981) defined code-switching as a personal rhetorical device that is used to clarify speech acts. In her southwest corpus, Valdés found that such switches took the form of single words, phrases, clauses, or complete sentences (p. 95). Valdés also looked at code-switching in the context of direct and indirect requests using corpus data from New Mexico State University. The author concluded that code-switching is a deliberate bilingual communication strategy that contributes to in person communication in the same way that a monolingual speaker dominates their language.

Huerta-Macías (1982) offered another data set in much the same direction, this time working with a single Chicano family. The author proposed that concentrating on a single family would aid in the attention to smaller detail that might otherwise be overlooked in a larger corpus. Huerta-Macías found that although Spanish was the maternal language spoken at home by all participants, participants still engaged in extensive code-switching, from Spanish into English. In line with the results found by Pfaff (1979), (Poplack (1980) and Valdés (1981), the author found that most of the switches consisted of sentences followed by nouns and phrases. Switches to English occurred most often when the topic shifted to matters outside the home. The same code switch items were frequently repeated across conversations, indicating reciprocity in the bilingual speech of the family. Thus, words that associated with the use of English were expressed in English. Huerta-Macías states that:

> Code-switching, where it serves certain social or other speech functions,
> actually depends on the separateness of languages for its
> effectiveness so that the tendency might instead be for code-
> switching itself to perpetuate two distinct languages as such, rather
> than to bring about their convergence (p. 168).

Pfaff (1979) studied Mexican American speech in two southwestern communities in California and Texas. The author aimed to see if and how different types of what she terms as *language mixing* (such as borrowing, calquing, and code-switching) are related, if and under what circumstances language mixing yields convergence, and whether the speaker requires a separate grammar of mixing to account for mixed varieties. The author asserted that *language mixing* is subject to functional, syntactic, semantic constraints as

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well as communicational properties of discourse. Pfaff notes that despite the existence of stigmatized varieties, code-switching is positive in that it reflects the desire of the speaker to display competence in both languages and to establish solidarity in the bilingual community.

Pfaff (1979) concluded that speakers who employ code-switching as a strategy of bilingual communication are competent in the syntactic rules of both languages and that therefore the grammars of both English and Spanish are meshed according to a number of linguistic constraints: functional, structural, semantic, and structural. What the author deems 'language mixing' of English and Spanish is not an example of a pidgin and creole because each code retains elements of their original grammars. Code-switches only occur at points where it is structurally feasible (maintaining Poplack's 1980 equivalence constraint).

In one of the few related studies on language maintenance and shift found on the Spanish of Arizona, Rivera-Mills (2010) studied patterns of maintenance and shift of Spanish in Flagstaff, Arizona. The author begins by stating that younger immigrants are less likely to retain Spanish and that "with each generation born in the United States there is a diminished transmission of the mother tongue, resulting in a shift from Spanish to English" (p. 157). The author cites the influence of education and upward economic mobility as possible reasons for such a shift away from Spanish. Rivera-Mills (2010) found that language maintenance is contingent on transmission from one generation to the next, and that this transmission is currently on the decline in the community in question. This study is in agreement with previous similar findings (Valdés, 1981; Zentella, 1981) that the home is the last bastion of Spanish use and retention, and that

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once that stronghold is eroded, the chances of its continued use across generations are slim.

The study showed a steady decline in the use of Spanish across second and third generations (with the exception of fourth generation participants reporting an increased use) in Arizona despite the state's proximity to the Mexican border. Participants that reported identifying ethnically more American than Hispanic showed a definite tendency of using less Spanish in the home (p. 167) while those that reported an exclusive use of Spanish identified as very Hispanic/more Hispanic.

Galindo (1993) took a slightly different, but still important track in her study of bilingual behavior in the southwest. Galindo examined bilingualism and language variation of Chicano speech through a discussion of 'universal' features in bilingual communities such as language contact, language maintenance, language shift, and language attitudes. Like previous and later studies done on bilingual communities, Galindo asserted that the large influx of immigrants into the southwest is likely what keeps different varieties of Spanish alive and flourishing. This influx also maintains a balanced population of bilinguals in Chicano communities.

On the topic of Spanish maintenance Galindo (1993) is in agreement with later studies, particularly Jenkins (2010) in so far as the assertion that "low socio-economic status and residence in segregated neighborhoods, coupled with little chance of upward mobility, have resulted in the retention of Spanish by a large number of speakers" (p. 201). The author went on to point out that (in the southwestern U.S.) the closer a bilingual community is located to the Mexican boarder the higher the chances are for the retention of Spanish. Galindo (1993) also denotes Spanish's status along the boarder as

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'high' while English was denoted as 'low'. The author maintained: "the most important factor for the continued existence of Spanish however, is the constant migration of Mexicans and Central and South Americans into the United States" (p. 201).

Galindo's focus was not on Spanish speakers, but rather on the 'English only' Chicano generation that though mostly monolingual, still retained enough competence to react and respond to Spanish. The author focused on accented English among Chicanos in terms of language shift, maintenance, and attitudes. She stated that Mexican American English is viewed as a non-standard and slightly deviant form (much as code-switching behavior was seen in earlier estimations). Language choice in Chicano communities is subject to many social and linguistic variables due to the socially stratified and heterogeneous natures of these communities. Use of Spanish can be associated with low social status, but can also at the same time be seen as a symbol of pride in maintaining one's culture. Use of (unaccented) English is associated with high educational aspirations. Through a qualitative framework, Galindo (1993) examined the language attitudes of Chicano English dominant adolescents and their perceptions of different English varieties, including African American and Anglo English.

The author found a cross-generational and social linguistic continuum, beginning with Spanish monolinguals and ending with English monolinguals. Between these two extremes, exist behaviors such as code-switching and borrowing which bilinguals engage in. The author claimed that Chicanos could be considered 'bi-dialectal' due to their ability to "shift from one variety of either language to the other, depending on the context and interlocutors involved" (p. 215). Furthermore, Galindo (1993) is also in agreement with Poplack (1980) and Gumperz (1977) that these varieties of Chicano English and

Spanish are their own linguistic systems and are not deviations from the norm, as they cannot be compared to a standard form of either language.

Jenkins (2010) looked at the relationship between language maintenance, demographics and socioeconomic factors in the southwestern United States. The study examined the relationship between socio-demographic factors and language maintenance in five southwestern states: Colorado, Arizona, Nevada, California, New Mexico and Texas. In the case of Arizona, the author found a correlation between Mexican nationality and language loyalty, income, and education, where loyalty to Spanish correlated directly with lower income and lower levels of education. Jenkins asserted that the price of linguistic loyalty in Arizona was lower levels of education and lower income.

In the case of Colorado, the author noted the importance of taking geography into account when looking at language maintenance. Unlike Arizona, Colorado is not a border state and therefore does not benefit from a heavy near daily influx of immigration. The density of Colorado's Spanish speaking population increases in the southern communities that were once part of the New Mexico territory. In this sample there was a lack of moderate or strong correlations between language loyalty and the retention of Spanish. The author did find a negative correlation between population density completion of high school, where higher densities of Hispanics appeared in counties with lower levels of income and education. The author noted however, that because the "density correlational coefficients…are higher for the total population than they are for the Hispanic population shows that, rather than this being an issue only among Hispanic population, higher densities of Hispanics appear in counties with lower overall levels of education and income" (p. 145).

As a whole, the data showed that counties with dense Spanish speaking populations had lower educational and professional attainment and income, and higher rates of poverty and unemployment. Jenkins concluded that based on the state-by-state analysis done, "Spanish language loyalty comes at an educational cost" (p. 153). Though the correlations between language loyalty, language retention and socioeconomic factors found in earlier studies had all but disappeared in more current reports (Hudson et. al, 1995), the analysis of individual states showed that only New Mexico and Arizona held a positive correlation between loyalty and lower socioeconomic status among Hispanics.

In a similar vein, Cashman's 2009 study discussed language shift and maintenance in the state of Arizona within the framework of the societal pressures that ultimately impact bilingual communities. Cashman identified language panic (which can cause a shift from one language to another) as a phenomenon that can stem from moral panic, which she defined as an obsessive, moralistic, and alarmist public discourse that arises from exacerbated social pressures and problems. Language panic arises when an ethno-linguistic group is made out to be the scapegoat of the aforementioned obsessive, moralistic and alarmist public discourse. On the other hand, language pride which can result in language maintenance equates a language with home and community and has an over all positive connotation. In Arizona language pride can be traced back to the roots of bilingual education efforts.

The author noted that most research to date on language maintenance and shift has highlighted the importance of how the speaker perceives language, and in bilingual societies how speakers perceive the different varieties that might be in competition with each other. In the southwestern United States, Spanish was spoken before English, and

there are ethno-linguistic groups that can trace their ancestry in one place back to before the Arizona territory was ceded to the United States. Despite this, moral and language panic in Arizona arose from immigration. The public response to this panic was hostility toward the Spanish language and Spanish speakers in the form of aggressive anti-immigration legislation that has imposed social limitations on Latino communities in Arizona. Despite Latino political representation, there is still little formal institutional support for Spanish, and what little support exists is targeted by anti-Latino, anti-Spanish, and anti-immigration activism.

Cashman pointed out that despite the relatively high international status of the Spanish language, it is stigmatized in the U.S. This presents Spanish speakers, particularly in the southwest, with a two-fold problem, what Villa (2000) (as quoted in Cashman, 2009) deems a "double jeopardy related to their bilinguality" (p. 56). He goes on to say that

> At one level, they face strong, vocal, public disapproval of Spanish…At
> another level, they are confronted by certain language experts who either
> explicitly or implicitly assert that their Spanish language skills are
> inadequate for any meaningful educational experience (Villa, 2002,
> as cited in Cashman, 2009, p. 56).

Cashman then went on to define the differential bilingualism faced by these groups; the "unequal value accorded to the bilingual skills of Anglos over the bilingualism of U. S. Spanish speakers" (p. 56). While Anglo bilingualism is praised and rewarded economically, bilingualism in Latino communities is stigmatized and seen as an unwillingness to conform or assimilate to the culture in which they now live.

Cashman concluded that the active campaigning in Arizona against the public support of Spanish (which has taken the form of English only legislation, and the dismantling of bilingual education (prop. 203)) sends the message that Spanish is not valued equally with English and therefore not worth maintaining. This contributes to in-group language panic, where members of the ethno-linguistic community shy away from Spanish for fear of being ostracized by the Anglo community. Cashman asserted that although the ethno-linguistic vitality of Arizona in relation to Spanish is being pulled simultaneously toward language maintenance and shifting toward English, without the continued immigration from Spanish speaking countries, a shift away from Spanish is inevitable.

While the literature is rich in many areas of the southwest and Mexican American Spanish, sociolinguistic studies done in Arizona are few, and code-switch studies in particular seem to be practically non-existent. This study aims to explore and compare code-switching behavior in the southwestern United States in two very different speech communities to see where they coincide and differ with respect to the linguistic constraints and social factors that are said to govern code-switching.

Research questions to be addressed.

1. How do the code-switching behaviors in Antonito, CO and the Phoenix Metropolitan Area compare with respect to:

    a. The configuration of the switch: intra-sentential or tag/single noun switching

    b. The point of initiation - beginning, middle (coded as other); end of the utterance (final)

    c. Direction of the switch: English→Spanish; Spanish →English

    d. Gender: male; female

    e. Level of education: college or above; high school or below

    f. The ethnicity of the interviewer: Anglo or Hispanic

    g. Is there a significant difference in code-switching rates between the individual factors in each factor group?

2. Which factors most contribute to an intra-sentential code-switch?

3. Are extra linguistic or linguistic factors more significant in terms of what causes an intra-sentential code-switch and how do both communities compare in that respect?

It is hypothesized that in both corpora women will code-switch more than men, and that the majority of intra-sentential code-switches will appear at the end or in final position of the utterance. Participants with at least some college level education or higher will code-switch more than those with a high school education or lower due to more exposure to and use of both languages. Participants interviewed by Anglo interlocutors will code-switch more than those interviewed by Hispanic interlocutors (Poplack, 1981;

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Cashman, 2005). In accordance with Poplack (1980), it is also hypothesized that single word or lexical switches will be more prevalent than intra-sentential switches.

It is also hypothesized that all factor groups will favor an intra-sentential code-switch in both communities. The direction and position of the switch in particular are predicted to be the most significant factors due to their linguistic nature. Thus, the main purpose of this study will be to highlight which factors are most significant in the production of the less common intra-sentential code-switches, and also to see if there are any similarities in what will cause an intra-sentential code-switch in the Spanish of Phoenix, Arizona and Antonito, CO.

Chapter 4

METHODOLOGY

Data and Participant Profiles

The data were taken from two corpora of transcribed oral data in the southwestern

United States: Antonito, Colorado and the Phoenix Metropolitan Area in Arizona. A total

of 8 interviews were used, four from each corpus which included two males and two

females respectively between the ages of eighteen and twenty-four and fifty-five and

sixty-seven (in Phoenix) and thirty-four to fifty and fifty-five to sixty-five (in Antonito).

The data were divided by gender, level of education (completion of a high school degree

or less, completion of at least an associate's degree or more), and the ethnicity of the

person that interviewed the participants (Hispanic or Anglo). Participants in both corpora

were selected to control for gender, level of education and the ethnicity of the

interviewer, yielding four interviews per corpus for a total of eight. The interviews used

were done in the style of Labov (Tagliamonte, 2006) with minimal spoken interference

from the interviewers. Questions about family life, leisure and school activities, and

positive memories and experiences were asked in an attempt to elicit natural speech from

the participants. Interviews lasted from forty-five minutes to an hour, and interviewers

were both of Hispanic and Anglo descent. Interviewers all had native or near native

proficiency levels of Spanish and all interviewers were college level Spanish instructors.

The data for the Antonito, Colorado corpus were collected in late 2011. Antonito,

CO is located in Conejos County and has a total population[1] of 1,767 residents, 1,463

(83%) of who identify as Latino or Hispanic. Antonito, CO is an insular community in

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[1] http://www.census.gov/popfinder/?fl=04:04013:0401392601:0802190095

the San Luis Valley of Colorado. The Spanish variety found there can best be described as *traditional Spanish,* a term coined by Bills & Vigil in their (2008) Atlas of the Spanish of New Mexico and Southern Colorado. The region in question experienced a linguistic and cultural isolation from the mother culture and tongue that is unheard of in other Spanish speaking communities in the United States. Along with this geographical isolation, this territory also went through three cycles of colonialism; first as a part of the Spanish empire in the furthest northeastern corner, next as a part of Mexico, and finally its acquisition by the United States. According to Bills & Vigil (2008), this isolation from other Spanish speaking settlements "contributed to the formation of an unique Hispanic culture and dialect which we call traditional Spanish" (p. 30).

The data for the Phoenix, Arizona corpus were collected in late 2012 and early 2013. The Phoenix Metropolitan Area in Arizona is located in Maricopa County and has a total population[2] of 2,972,357 residents 991,809 (33%) of who identify as Latino or Hispanic. In contrast to Antonito's extreme isolation in the San Luis Valley, Phoenix is located in a state along the Mexican boarder, and therefore is constantly receiving new Spanish speaking residents, not only from Mexico but also from South and Central America and along with them, newer varieties of Spanish to incorporate into their dialect. These communities were chosen precisely because of these differences in exposure to English and other varieties of Spanish, their geographical locations, making for a comparison of code-switching behavior in two very distinct varieties of southwestern Spanish bilingual communities.

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[2] http://www.census.gov/popfinder/?fl=04:04013:0401392601

Data Analysis

Code-switches in both corpora were identified and coded by linguistic factors including configuration (intra-sentential or a tag/single noun (lexical) switch; known lexical borrowings were not counted), the position of the switch within the discourse (final or other), and the direction of the switch or (from English into Spanish or from Spanish into English). It bears mentioning that although all tokens were originally coded for either their respect or violation of the equivalence and free morpheme constraints, 100% of tokens in both corpora respected both constraints, and they were therefore not included in the final multi-variate analysis of the data as a factor group. Extra linguistic factors were coded for gender, highest level of education achieved, and the ethnicity of the interviewer.

The dependent variable was the configuration of the switch specifically the less commonly used intra-sentential code-switch. The results of each corpus were tabulated, ranked by factor weight and range according to the multi-variate analysis results of GOLDVARB, and then compared. The data were analyzed statistically through the GOLDVARB program in order to determine the relationship between linguistic and extra linguistic factors and code-switching behavior, and to determine which factors were the most favored the occurrence of an intra-sentential switch. The syntactic similarities between English and Spanish have been used to explain why the equivalence and free morpheme constraints have been labeled universal in the realm of English and Spanish (Poplack, 1980). Due to the fact that 100% of all tokens in both corpora respected both constraints, it was obvious even before any analysis was done that they were both indeed universally respected in both corpora used in this study. Finally, a difference of

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proportions test was performed within each factor group to determine if any difference in rates of code-switching among individual factors were statistically significant. Also, difference of proportions tests were performed within each factor group in relation to only intra-sentential code-switches in order to determine if different rates of intra-sentential switches were statistically significant as well.

This analysis seeks to determine if there is indeed a relationship between different social and linguistic contexts and intra-sentential switches, and to see if linguistic or social factors are more significant in determining the code-switching behaviors exhibited by the participants of these corpora.

Chapter 5

RESULTS

Phoenix, AZ Corpus

Frequencies. Out of 260 tokens examined, 20.4% (53) resulted in intra-sentential

switches and 79.6% (207) resulted in lexical or single word switches. A difference of

proportions test was performed, and the difference between the rates of intra-sentential

and single word or lexical switches was found to be statistically significant at the .01

level[3] (Z= 9.74>2.58). These results are consistent with the literature in that single word

switches are more common than intra-sentential switches (Gumperz, 1977; Poplack,

1980; 1981; 2004). Also in agreement with the previous literature, women did code-

switch more than men 59.2% (154) v. 40.8% (106). A difference of proportions test was

performed in this case as well and found the difference in frequency between men and

women to be statistically significant at the .01 level (Z= 2.88>2.58). Participants with a

college education or higher (170) code-switched more than those at the high school and

below level (90) (65.4% v. 34.6%), which was also determined to be statistically

significant at the .01 level (Z=4.87>2.58). As for the ethnicity of the interviewer, as

predicted those interviewed by Anglo interlocutors code-switched more (170) than those

interviewed by Hispanic interlocutors (90) (65.4% v. 34.6%). A difference of proportions

test proved this difference to be statistically significant at the .01 level as well (Z=

4.87>2.58). Code-switching occurred more in other positions (beginning and middle,

151) rather than at the end of the utterance (109) (58.1% v. 41.9%). This difference was

found to be statistically significant at the .01 level as well (Z=2.59>2.58). Code-switches

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[3] Statistical significance is measured by Z= 1.96 (α .05) and Z= 2.58 (α .01)

ran from Spanish to English (242) with more frequency than from English to Spanish (18) (93% v. 7%). This was found to be significant at the .05 level (Z= 2.1>1.96). Table 1 below displays the frequencies for each factor group examined.

Table 1

Frequencies of Intra-sentential and Lexical Code-switching in Phoenix, AZ by Factor Group.

Factor			Sentential	Lexical	Total	%
Direction	SPA→ENG	n	42	200	242	93.1
		%	17.4	82.6		
	ENG→SPA	n	11	7	18	6.9
		%	61.1	38.9		
Position	Final	n	40	69	109	41.9
		%	36.7	63.3		
	Other	n	13	138	151	58.1
		%				
Ethnicity of interviewer	Anglo	n	29	141	170	65.4
		%	17.1	82.9		
	Hispanic	n	24	66	90	46.3
		%	26.7	73.3		
Gender	Male	n	26	80	106	40.8
		%	24.5	75.5		
	Female	n	27	127	154	59.2
		%	17.5	82.5		
Education	College+	n	29	141	170	65.4
		%	26.7	82.9		
	High school-	n	24	66	90	34.6
		%	26.7	73.3		
Total		n	53	207	260	
		%	20.4	79.6		

Multi-variate analysis. With respect to which factor groups favored the occurrence of an intra-sentential switch, position (final) and direction (ENG→SPA) were the only factor groups of the five examined to have been found significant in the Phoenix corpus. All other factors groups (gender, level of education, and the ethnicity of the interviewer) were eliminated during the multi-variate analysis. Table 2 below displays the factors in the corpus found to be significant and not significant, ranked by the range in their factor weights, which was determined during the multi-variate analysis.

Table 2

Multi-variate Analysis of Factors Favoring an Intra-sentential Switch in Phoenix, AZ.

Corrected mean		.17		
Log likelihood		-111.990		
Total N		260		

Factor Group		Factor weight	%	N
Position				
Final		.72	41.9	109
Other		.33	58.1	151
Range	39			
Direction				
ENG→SPA		.80	93.1	242
SPA→ENG		.47	6.9	18
Range	33			
Ethnicity of interviewer				
Hispanic		[.58]	34.6	90
Anglo		[.46]	65.4	170
Gender				
Male		[.55]	40.8	106
Female		[.47]	59.2	154
Education				
College+		[.50]	34.6	90
High school-		[.50]	65.4	170

The factors that most favor an intra-sentential switch are final position (.72) and the direction of the switch, i.e. an utterance beginning in English and ending in Spanish (.80). Examples E and F respectively below demonstrate these two factors:

E (Male 2): Porque tuvimos un pasado muy, muy como se dice,

muy…*like savage. Like, I dunno, so.*

(Because we had a past that was very, very, how do

you say, very...)

F (Male 1): Entonces pues llegaba mi papá del trabajo y mi mamá

lo…¿sabes lo que hicieron esos vagos?...*you know…and*

then take (it) to the bedroom and gives a couple of whacks.

(Then my dad used to come home from work and my mom

...do you know what these slackers did?...)

While only position and direction were deemed to be significant factors in what might lead to an intra-sentential switch in this corpus, there were significant differences in the over all frequencies of intra-sentential code-switches between the factors examined in each factor group. A difference of proportions test was performed within each factor group, and of the five examined in this corpus there was a significant difference at the .01 level within the rates of intra-sentential switches in the factor groups of direction of the switch ($Z= 4.2 > 2.58$) and the position of the switch ($Z= 3.6 > 2.58$). All other factor groups examined (the ethnicity of the interviewer, gender, and level of education) within

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the intra-sentential code-switch rates were not found to be statistically significant by the difference of proportions test.

Antonito, CO Corpus

  Frequencies. In the Antonito, CO corpus, out of 271 token examined 37.6% (102) resulted in an intra-sentential switch while 62.4% (169) resulted in a single word or lexical switch. A difference of proportions test determined this difference to be statistically significant at the .01 level (Z= 3.94>2.58). These results are also consistent with the literature in that single word switches more common (Gumperz, 1977; Poplack, 1980; 1981). In this corpus women again code-switched at a higher rate than men, 52% (141) v. 48% (130) however a difference of proportions test did not find this to be statistically significant (Z= 0.65<1.96). The results for level of education were similar; informants with an associate's degree or higher (141) engaged in code-switching more than those with a level of high school or below (130), (52% v. 48%), and a difference of proportions test also found this to be not significant (Z=.65<1.96). Participants interviewed by Anglo interlocutors (173) code-switched at higher rates than those interviewed by interlocutors of Hispanic descent (98) (64% v. 36%). This difference was found to be statistically significant at the .01 level (Z=4.61>2.59)

  The more linguistically centered factor groups direction and position were in line with the Phoenix corpus in terms of frequency; Spanish to English was the more common direction by a very large margin, 86.7.3% (235) while English to Spanish code-switches were counted at 13% (36). A difference of proportions test confirmed this to be statistically significant at the .01 level (Z =283.3>2.58). As for the position of the

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switches, again other (beginning or middle) of the utterance were the most frequent

position occurring 63.8% (173) of the time, while code-switches at the end of the

utterance were occurred less frequently 32.6% (98). A difference of proportions test

found this to be statistically significant at the .01 level (Z=4.3>2.58). Table 3 below

displays the frequencies for each factor group examined.

Table 3

Frequencies of Intra-sentential and Lexical Code-switching in Antonito, CO by Factor Group

Factor			Sentential	Lexical	Total	%
Direction	SPA→ENG	n	89	146	235	86.7
		%	37.9	62.1		
	ENG→SPA	n	13	23	36	13.3
		%	36.1	63.9		
Position	Final	n	52	48	100	36.9
		%	52	48		
	Other	n	50	121	171	63.1
		%	29.2	70.8		
Ethnicity of interviewer	Anglo	n	72	101	173	63.8
		%	41.6	58.4		
	Hispanic	n	30	68	98	36.2
		%	30.6	69.4		
Gender	Male	n	47	83	130	48
		%	36.2	63.8		
	Female	n	55	86	141	52
		%	39	61		
Education	College+	n	55	86	141	52
		%	39	61		
	High school-	n	47	83	130	48
		%	36.2	63.8		
Total		n	102	169	271	
		%	37.6	62.4		

Multi-variate analysis. Out of the 5 factors examined in the Antonito, Colorado corpus, position, final (.65) was the only factor deemed significant in favoring an intra-sentential code-switch. The other factor groups, direction, gender, education, and the ethnicity of the interviewer were eliminated during the multi-variate analysis. Table 4 below displays both the significant and not significant factors in the corpus, ranked by the range in their factor weights determined during the mutli-variate analysis.

Table 4

Multi-variate Analysis of Factors Favoring an Intra-sentential Switch in Antonito, Colorado

Corrected mean			.37	
Log likelihood			-172.567	
Total N			271	

Factor Group		Factor weight	%	N
Position				
Final		.65	36.9	100
Other		.41	63.1	171
Range	24			
Direction				
ENG-->SPA		[.62]	13.3	36
SPA-->ENG		[.48]	86.7	235
Ethnicity of interviewer				
Anglo		[.55]	63.8	173
Hispanic		[.42]	36.2	98
Gender				
Female		[.55]	52	141
Male		[.45]	48	130
Education				
College+		[.51]	52	141
High school-		[.49]	48	130

Position (final, .65) was found to be the most significant factor in predicting what might cause an intra-sentential switch in this corpus. Examples G and H below demonstrate such a switch:

> **G (Female 2):** Ah, cerraron todo las puertas y los, uh, las ventana y las quedaron tenemos que *I don't know what you call it.*
> (Ah, they closed all the doors and the, uh, the windows and they kept them, we have to...)
>
> **H (Female 1):** Algunas cosas de estas no había recordado hasta, hace mucho, hasta ahora que estoy platicando con usted, *it's nice, it's nice to remember those things.*
> (Some things that I hadn't remembered since, since a long time, until now that I am talking with you...)

While only position was deemed to be significant in what might lead to a sentential switch in this corpus, there were significant differences in the rates of frequencies of intra-sentential code-switches between the factors when their factor groups were examined individually. A difference of proportions test was performed within each factor group, and of the five examined in this corpus there was a significant difference within the rates of intra-sentential switches in the factor groups of direction of the switch and the ethnicity of the interviewer ($Z= 7.4$ and $4.25 >2.58$ respectively). All other differences within the intra-sentential switch rates were not found to be statistically significant.

Chapter 6

DISCUSSION

Comparison of the Two Communities

 Frequencies. As expected, both southwestern communities shared many similarities in their code-switching behaviors. Women code-switched more than men in both communities (59% female v. 41% male in Phoenix, 52% female v. 48% male in Antonito) however, only in the Phoenix corpus was there a significant difference in the rates of code-switching behavior between males and females. This confirms what previous studies (Gumperz, 1977; Pfaff, 1979; Poplack, 1980, Poplack & Meehan, 1998, Silva-Corvalán, 2001) have concluded about the role of gender in code-switching behavior. This study also confirms that women code-switch more, both lexically and intra-sententially in the two corpora examined. This is most likely due to the fact that as Silva-Corvalán (2001) affirmed, women have the tendency to use 'standard' linguistic forms, and shy away from deviating from these speech patterns. Women will use the standard in which ever code they know it best, meaning for example, that a code-switch will occur when drawing a blank on a word or phrase. Rather than risk expressing themselves 'incorrectly' women will switch languages in order to avoid a potential mistake. This is clearly seen in this study when the rates of intra-sentential code-switching of men and women are compared. Though a difference of proportions test ruled out statistical significance in both corpora, women did code-switch intra-sententially more than men (51% v. 49% in Phoenix and 54% v. 46% in Antonito). These findings echo those of Poplack (1980), where women also code-switched intra-sententially at higher rates than men.

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As for the direction of the switches, in both the Phoenix and Antonito corpora the majority of the switches ran from Spanish into English (93% in Phoenix and 87% in Antonito), which is also in line with previous studies (Valdés, 1981, Zentella, 1981, Huerta-Macías, 1982, Floyd, 1982). There was a significant difference between the rates of code-switching in this factor group for both communities. The rates of the position of the switches also coincided in both communities, with 'other' being the more common position to find a switch (58% v. 42% in Phoenix and 63% v. 37% in Antonito). A difference of proportions test found a significant statistical difference within this factor group in both communities as well.

This can be accounted for in several ways. First, the interview schedules for both corpora were in Spanish. Every effort was made on the part of the interviewer to keep the conversation in Spanish, even when participants switched to English. This data comes from two corpora, both of which were collected with the intention of being used in multiple studies of diverse linguistic phenomenon of the Spanish language speech patterns of the communities in question. Due to this fact, most initiation points were in Spanish, meaning that a switch would naturally flow into English. The switches from English into Spanish occurred when participants answered a question asked in Spanish in English. Excerpt I below from the Phoenix corpus will serve as an example of such an exchange:

I (Interviewer): No te gustan? Por qué?

(You don't like them? Why?)

(Female 2): I'm scared—*les tengo miedo.*

(I'm scared of them)

Another possibility (which was not examined as a factor in this study) is topic change. Specific topics lend themselves to specific codes. In the southwestern communities in question, work and school life will most likely be associated with English use, particularly for participants that have completed higher levels of education, and home and family life might lend itself better to Spanish, particularly if Spanish is the only language spoken in the home (Zentella, 1981).

The factor group level of education was also the same in terms of frequency for the two communities with college and above group being the one to most frequently code-switch (65% v. 35% in Phoenix and 52% v. 48% in Colorado). However, only in the Phoenix corpus was the difference between college and high school educated participants statistically significant. This is also in line with previous studies that have stated education to be a contributing factor to code-switching behavior (Poplack, 1980, Zentella, 1981, Rivera-Mills, 2010; Jenkins, 2010).

Finally, within the factor group of ethnicity of the interviewer participants interviewed by Anglo interlocutors code-switched more in both communities (65% v. 35% in Phoenix and 64% v. 36% in Antonito). The difference between rates of code-switching in the Anglo interviewer group versus those in the Hispanic interviewer group were found to be statistically significant at the .01 level (Phoenix, $Z=4.87>2.58$; Antonito, $Z=4.61>2.58$) by a difference of proportions test in both communities. This is

in line with previous studies (Poplack, 1981; Cashman, 2005) in which the ethnicity of the interviewer (whether it was stated out right or merely as perceived by the participant) was found to have an affect on the code-switching behavior of the participants, whether consciously or unconsciously. As for the configurations of the switches, in both corpora, lexical or single word switches were more frequent than intra-sentential switches, as expected (62 % v. 38 % in Antonito and 80% v. 20% in Phoenix). This difference was found to be significant by a difference of proportions test at the .01 level (Z= 3.94>2.58 in Antonito, and Z= 9.74>2.58 in Phoenix).

Multi-variate analysis. The results of the multi-variate analysis were similar for both the Phoenix and Antonito corpora. In both corpora, all of the social factor groups were not found to be significant in determining an intra-sentential switch. Position was the only factor group found to favor an intra-sentential code-switch in both corpora. In the Phoenix corpus, both linguistic factors (position and direction) were deemed significant, while in the Antonito corpus only position was found to be the significant factor group. In both the Phoenix and Antonito corpora, intra-sentential switches taking place at the end of the utterance had the higher factor weight (.72 and .65 respectively).

In regard to differences in frequencies among intra-sentential switches in each factor group, the factor group direction was the only one to have a significant difference among the frequency of intra-sentential switches in both corpora. These results echo the reasoning given above for Spanish → English to be more common. In the Phoenix corpora where direction was a significant factor in determining an intra-sentential switch, the direction with the higher factor weight, and therefore the direction that favored intra-sentential switches was in fact English → Spanish. This might be accounted for in that

both English → Spanish and intra-sentential code-switches were less frequent over all.

English use was employed when finishing a though that might have been difficult for the

participant to complete in Spanish. This leads back to the question of topic change in

code-switching. Perhaps the topic was influential to participant's difficulty in articulating

in one language over the other.

In regard to gender and education, neither corpus had a significant difference in

the rates of intra-sentential switches. Table 5 below compares the difference of

proportion for factor groups in both communities.

Table 5

Statistical Significance of Factor Groups by Frequency of Intra-Sentential Switches

	Phoenix		Antonito	
Significant	**Not Significant**	**Significant**	**Not Significant**
Direction (Z=4.2)	Ethnicity of the interviewer	Direction (Z=7.4)	Position
Position (Z=3.6)	Gender	Ethnicity of the interviewer (Z=4.3)	Gender
	Education		Education

In both corpora, out of the five factor groups examined for their significance in

predicting what might cause an intra-sentential switch, only linguistic factors were

selected as significant by the multi-variate analysis. This fits in with all previous studies

(Gumperz, 1977; Pfaff; 1979; Poplack, 1980 & 1981; Toribio, 2001) that assert that code-

switching behavior is governed by linguistic factors. In the case of intra-sentential switches, linguistic factors were the most significant, and from this it can be inferred that in both corpora intra-sentential code-switching behavior was primarily governed by linguistic factors (namely the position of the switch, which was the only factor found to be significant in both communities). Code-switching behavior in terms of over-all frequencies were very much affected by social factors, perhaps most interestingly the highest level of education completed and the ethnicity of the interviewer.

Respect or violation of the linguistic constraints mentioned by both Poplack (1980) and Gumperz (1977) was not included in the multi-variate analysis as a factor group because upon examining each individual token, it was found that no token violated either the equivalence or the free morpheme constraints. As respect for both constraints was at 100% for both communities, examining this as a factor was unnecessary. It can therefore be concluded that in the case of the Phoenix Metropolitan area in Arizona and Antonito, Colorado corpora used in this research, respect of the free-morpheme and equivalence constraints was universal, in accordance with Poplack, (1980).

The effect of the ethnicity of the interviewer on code-switching behavior, both in terms of total frequency and intra-sentential switches was interesting in that while there was an over all effect in terms of frequency, it was not significant in terms of causing an intra-sentential switch. It was hypothesized that participants would code-switch more when interviewed by Anglo interlocutors. One reason for this can be traced back to language attitudes among bilinguals, especially in the state of Arizona (Cashman, 2009; Rivera-Mills, 2010; Jenkins, 2010). Despite not being a significant factor in terms of determining an intra-sentential switch, in both communities participants interviewed by

interlocutors of Anglo heritage code-switched significantly more than those interviewed by interlocutors of Hispanic Heritage. This is in line with Cashman's (2009) analysis of language attitudes in Arizona, and of Jenkins' analysis of language attitudes the in southwest.

Though at this juncture such ideas can only be inferred, one might also reason that code-switching behaviors were more frequent in the Anglo interviewer groups due to the participant's own underlying attitudes about language prestige, especially considering the direction of the majority of the switches (Spanish into English). Studies such as Zentella, (1981) state that among her corpus of bilinguals Spanish was the language spoken at home among family and close friends while English was the language used for school and work environments. This might explain not only the differences among the ethnicity of the interviewers, but also the direction of the majority of the switches. Though all interviewers attempted to begin and remain in Spanish at all times, participants nonetheless switched to English, and this was done more so when the interviewer was or looked to be of Anglo heritage, in both corpora.

In so far as education is concerned, although it was eliminated during the multi-variate analysis and therefore was not significant in terms of what causes an intra-sentential code-switch, when looking at the raw frequency of code-switches themselves, education does play a role in code-switching behavior in both samples. In both communities, participants that had completed an associate's degree or more code-switched more frequently than participants that had completed only up to or below a high school degree. These differences were only found to be statistically significant in the Phoenix corpus at the. 01 level (65% v. 35%) (Z=4.87>2.58). While there was a

difference in the Antonito corpus (52% v. 48%), it was not found to be a significant difference (Z=.65<1.96).

These findings indicate that code-switching was in fact effected by education in both corpora. Prolonged monolingual education will increase exposure to the English language in both its oral and written forms. Zentella (1981) confirmed that in her corpus of bilingual Spanish and English were separated into the 'home' and 'work/school' realms. Jenkins' 2010 study on the state of Spanish in the southwest found that the retention of the Spanish language was linked to communities where educational and professional attainment is low. It can be said that these results somewhat reflect the correlations found by Jenkins (2010) between the maintenance of Spanish and levels of education. Participants with higher levels of education used both codes more often than those that had only completed high school. Thus in the latter group, Spanish, the native language held more sway than the second language, English due most likely to levels of exposure to written and spoken English. These results are in agreement with the findings of Galindo (1993) and Jenkins (2010), both of whom linked lower levels of education to the retention of Spanish in southwestern communities.

As for the relationship between intra-sentential switches and level of education, in both corpora, participants that had completed an associate's degree or higher code-switched more intra-sententially than participants that completed a high school or below. These results support the findings mentioned in the above over-all frequencies, and also support the hypothesis that higher levels of education lead to the introduction of more English structures into the speech of bilinguals as also found by Galindo (1993), Jenkins (2010) and Rivera-Mills (2010).

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Though age was not looked at as a factor in this study, it does bear mentioning that participants that were coded as having completed a high school education or below were all over the age of fifty, in both corpora. In the case of the Phoenix corpus, only one was born in the United States. In the Antonito corpus, all participants were born in the United States. Age might in fact be a very significant factor in code-switching behavior, not only for its own sake, but also for how it might interact with other factors such as education.

Chapter 7

CONCLUDING REMARKS

Summary of Findings

In sum, while the original hypothesis stated that all factors would favor an intra-sentential switch, this was not the case. Only position and direction were found to be significant, with position being the only significant factor in the Antonito, CO corpus, while both direction and position were significant in the Phoenix, AZ group. In terms of frequency, single noun or lexical switches were more prevalent in both corpora, confirming previous studies (Gumperz, 1977; Pfaff, 1979; Poplack, 1980; 1981).

Although most switches initiated in the 'other' position (coded for switches that initiated at the beginning or end of the utterance), final position or end of utterance was deemed to be the most significant by the multiple regression analysis. The majority of switches ran in the direction of Spanish to English in both corpora. Direction was only significant in the Phoenix corpus, although the difference in rates of Spanish to English and English to Spanish switches was proven to be significant at the .01 level by a difference of proportions test in both corpora.

In both the Phoenix and Antonito corpora, women code-switched more than men, however the difference between rates of code-switching in the gender factor group was only found to be significant in the Phoenix corpus. Likewise, level of education showed that participants with a college or higher education code-switched more often than participants that had completed high school or below. This difference was again found to be significant only in the Phoenix corpus.

In both samples the ethnicity of the interviewer did affect the overall frequencies of code-switching. Participants that were interviewed by interlocutors of Anglo heritage code-switched with more frequency than those interviewed by interlocutors of Hispanic heritage in both the Antonito and Phoenix corpora. Both of these differences were deemed as statistically significant by a difference of proportions test in both communities. While this was significant in terms of frequency, the multi-variate analysis eliminated this factor group as significant in determining an intra-sentential switch in both corpora, meaning that the ethnicity of the interviewer was not significant in either corpus in terms of intra-sentential code-switching.

As for which factor groups were more influential in determining an intra-sentential code-switch, the multi-variate analysis for both corpora eliminated all social factor groups (gender, level of education and the ethnicity of the interviewer), determining linguistic factors to be more influential in the occurrence of an intra-sentential code-switch. In both corpora position was the factor group determined to be most significant in causing an intra-sentential switch versus a single word or lexical switch. In the Phoenix corpus direction was also determined to be significant, specifically English → Spanish, and not the over-all more frequent Spanish → English. Direction was eliminated in the Antonito corpus. It can therefore be concluded that in the two corpora analyzed for this study that social factors did play their roles in terms of frequency of code-switching itself, however the dependent variable intra-sentential code-switching was governed exclusively by linguistic factors.

Limitations of this study

One of the main limitations in this study was the size and scope of both samples. The data used for this study came from two corpora of interviews. In order to adequately control for the social factors of gender, education, and the ethnicity of the interlocutor, not all the interviews that were conducted could be included. This same fact also made it impossible to control for and therefore examine the age group of the participants. While the Antonito corpus had participants in the 35 to 70 age range and none below, the Phoenix corpus had participants between the ages of 18 to 24 and 55 to 70 but nothing in between. For this reason, age was not included as a factor in the analysis.

Secondly, the use of corpus data gives the researcher access to the raw speech data and nothing else. It was not possible to survey the participants for their individual attitudes toward language preference or ethnicity, or to go back to the participants for potential second interviews.

Another limitation of this study is the difference in size and population of both communities. Antonito, Colorado is located in Conejos County and has a total population of 1,767 residents 1,463 (83%) of who identify as Latino or Hispanic. The Phoenix Metropolitan Area in Arizona is located in Maricopa County and has a total population of 2,972,357 residents 991,809 (33%) of who identify as Latino or Hispanic[4].

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[4] It should also be noted that census information counts only those residents that wish to be counted. These figures to do not account for all residents of either Phoenix, AZ or Antonito, CO and so the Hispanic population densities (particularly of Phoenix) are most likely higher.

Antonito is located in Conejos County in the San Luis Valley of Colorado. This town's small population, coupled with its geographic isolation from other Spanish speaking populations have created what Bills & Vigil (2008) termed *traditional Spanish*, which can be considered a different dialect all together from what is heard in Phoenix. The Spanish of Antonito has been the Spanish passed down generationally, with limited outside influence. Phoenix on the other hand, is located in Maricopa County and benefits from a larger population, and sharing a boarder with Mexico. Thus, there is a constant influx of immigrants whom bring different varieties with them. While the Spanish of Antonito remains very slow to change, the Spanish spoken in Phoenix can be said to be much more dynamic. Therefore, the samples differed not only in size, but also in the variety of Spanish spoken.

Finally, all participants that fell into the high school or below group in the educational level factor group were over the age of fifty, and only one participant was born in the United States. Controlling for birthplace would be a step in accounting for potential cultural and generational differences that might yield a potential bias in the results.

Suggestions for Future Research

Future research should of course include a much larger sample of both populations, particularly of Phoenix where very little research has been done. A larger sample will enable any future researchers to control for and therefore include the age groups of the participants. Due to the fact that the majority of participants with a high school education and under were belonged almost exclusively to higher age groups, it

will be interesting to see where a potential correlation between age and level of education leads in regard to code-switching behavior.

Along with the ethnicity of the interviewer, future research should also consider the gender of the interviewer. Gender interaction varies greatly between not only cultures, but also inter-generationally. Examining if the gender of the interviewer yields any effect on the code-switching behavior of participants would be useful in planning future research designs and would also help to further clarify patterns of code-switching behavior.

Another factor that should be included in further analysis is the function of the code-switches. Gumperz (1977) reviewed the functions of conversational code-switching and enumerated them as such: quotations or reported speech, addressee specification or directing the message to more than one person, interjections or sentence fillers and repetition or clarification (pp. 14-16). Examining the different functions of English→Spanish versus Spanish→English switching will help paint a clearer picture of bilingual code-switching behavior.

Finally, along with function, it will be interesting to examine if changes in topic affect intra-sentential and lexical code-switching behavior. As Zentella (1981) and this study have shown, the home and work/school domains can have an effect on the vocabulary participants might need to utilize in conversation. Carefully controlling the topics discussed and gearing questions to deliberately separate the home and work/school domains might yield interesting results.

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