Language Loss and Recovery in Heritage Language Learner Spanish: A Study on Code-Switching

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I. Introduction

The current study seeks to evaluate language loss through examination of code-switching structure in Heritage Language Learner Spanish. Due to the complex nature of bilingualism, it is necessary to define what is meant by Spanish Heritage Language Learner (HLL) in the United States. HLLs of Spanish are characterized by varying degrees of exposure to the language as well as various levels of proficiency (Roca & Colombi, 2003: 3). It may be the case that a HLL was born in the U.S. to a family in which one or both parents speak Spanish, or that he or she was born in a Spanish-speaking country and immigrated to the U.S. at an early age. Spanish may be a HLL's first or native language or a HLL may have been exposed to both Spanish and English in the home. For those HLLs born in the U.S. and enrolled in U.S. schools, English may be their cognitively dominant language. According to Roca and Colombi (2003), "Some heritage learners of Spanish may understand basic informal communication but may have limited repertoires and registers and may be unable to speak with much confidence in Spanish without resorting to English, their dominant language" (3-4). Other HLLs may have completed some formal schooling in Spanish prior to arriving in the U.S. Typically, these students are placed in Spanish for Native Speakers classes in U.S. schools. The complexity arises from the fact that the HLL population is comprised of diverse sociocultural backgrounds and differing communicative abilities, presenting important issues to both educators and researchers concerning their language development. The inherent variability that characterizes the grammar and discourse of HLLs gives rise to specific instructional considerations that teachers must address, such as heightening learner awareness of variability in dialect and register. The situation is further complicated by issues of language contact. Poplack (1993) explains that "sustained contact between two languages may manifest itself linguistically in one or more of the following ways: code-switching, lexical borrowing on the community and individual levels, incomplete L2 acquisition, interference, grammatical convergence, stylistic reduction, language death" (255). HLLs in the Southwestern United States are faced with challenges involving language maintenance, loss and individual attrition that may be attributable to contact

with the dominant language, English. Due to this fact, the language development of HLLs is particularly subject to variation caused by both internal linguistic and external social factors.

II. Literature Review

As established by Poplack (1993), code-switching becomes an issue in language contact situations. Thus it becomes necessary to define what is meant by code-switching and to describe how the various accounts of the phenomenon fit into the context of HLLs of Spanish. According to Gumperz (1982) a code switch is "the juxtaposition within the same speech exchange of passages belonging to two different grammatical systems or subsystems" (59). Code-switching has also been defined as "the alternate use of two or more languages in the same utterance or conversation" (Grosjean, 1982: 150). Code-switching is here defined as "the alternation of two languages within a single discourse, sentence or constituent" (Poplack, 1980: 583). For the purpose of this study and to address the quick chatty nature of the simultaneous chat data, I would add to this definition the alternation of two languages within a speaker's turn thus including the phrase as another possible boundary within which code-switching may occur.

Most early research in the area of code-switching disregards consideration of the balanced versus the unbalanced bilingual, suggesting that any occurrence of the phenomenon is a haphazard random mixture of languages representing an ungrammatical contamination of sorts (Lance, 1975). Weinreich (1968), however, does make a distinction between appropriate versus inappropriate language behavior for the highly proficient bilingual claiming that "the ideal bilingual switches from one language to the other according to the appropriate changes in the speech situation (interlocutors, topic, etc.), but not in unchanged speech situations, and certainly not within a single sentence" (73).

More recent research has determined a differentiation between patterns of language use that delineate between the highly-skilled code-switching of the balanced bilingual and the compensatory nature of language switching characteristic of the non-fluent bilingual and the second language (L2) learner. Troike (2005) emphasizes the notion that code-switching is, in fact, a "genuine skill" of the fluent bilingual that is both grammatical and rule-governed (77). He further adds that "the ability to switch between two languages within a sentence—known as (intrasentential) code-switching—is a remarkable skill possessed only by bilinguals who are genuinely fluent in both of their languages" (Troike, 2005: 75). Poplack's (1981) seminal work further establishes the grammaticality of code-switching, accounting for the phenomenon with proposed syntactic constraints. The free morpheme constraint stipulates that "codes may be switched after any constituent in discourse provided that constituent is not a bound morpheme" unless such morpheme has been both morphologically and phonologically integrated in terms of the language of the bound morpheme (Poplack, 1980: 585). The equivalence constraint specifies that "code-switches will tend to occur at points in discourse where juxtaposition of

L1 and L2 elements does not violate a syntactic rule of either language" (Poplack, 1980: 586). In a study of the code-switching patterns of adults in a New York Puerto Rican community, Poplack (1980) establishes qualitative differences between the code-switching of the balanced bilingual vs. the unbalanced bilingual. Her findings indicate that the more fluent bilingual is shown to more frequently switch intrasententially, whereas the less fluent bilingual avoids grammatically risky switch points by code-switching between sentences. Patterns of switching for both populations, however, are shown to adhere to grammatical constraints.

In the literature on Spanish-English code-switching there is general agreement as to which elements are frequently switched and which elements are avoided as boundary sites. Zentella (1997), in a study of code-switching patterns among New York Puerto Rican children, shows that children honor the hierarchy of switch points also exhibited by adult code-switching in a Houston Mexican-American community (Lipski, 1985) as well as the adults in a New York Puerto Rican community (Poplack, 1980). The five leading categories across studies include the following syntactic constituents: Noun, Sentence, Tag, Object NP and Independent Clause. The most infrequently switched categories include auxiliaries, determiners, prepositions and adjectives (Zentella, 1997).

While there is some general consensus as to what linguistic elements are frequently or infrequently switched across age groups, it is clear that degrees of bilingualism are reflected in distinct patterns of code-switching behavior. What results, then, is a continuum that progresses from what is described as the "highly skilled" switching of the "balanced bilingual" to the switching of the non-fluent bilingual exhibiting language loss or attrition, to the code-switching of the L2 learner described by Lüdi (2003) as "translinguistic wording" (176). At one extreme of the continuum code-switching performance represents high degrees of linguistic competency and at the other extreme code-switching becomes a manifestation of loss of underlying levels of competency or represents incomplete linguistic knowledge. In the context of language attrition, Turian & Altenberg (1991) describe code-switching as an intralingual strategy used to compensate for linguistic elements that are lost or no longer accessible to the L1 attriter. Code-switching is also described by Poulisse et al. (1984) as "a strategy which results in the interpolation of another language, either the learner's native language or another foreign language" (93). Data from Turian & Altenberg (1991) suggest that compensatory strategies are indeed the same for both L1 attrition as well as L2 acquisition and that both children and adults equally resort to the same types of strategies. Compensatory code-switching or "translinguistic wording" involves negotiation or gap filling with the L1 or cognitively dominant language and is utilized by the "unbalanced bilingual" as a communicative strategy to counteract the effects of an insufficiently-developed system (Lüdi, 2003: 176). Lüdi (2003) does point out, however, that "most plurilinguals have in some way gaps in their (lexical) knowledge of all their languages" (178).

Thus far the gap-filling nature of compensatory code-switching has been defined as a

means by which *lost* linguistic information can be "recovered" via the speaker's dominant language. It is possible, however, that such information is not in fact lost or forgotten, but rather experiences a reduction in accessibility due to a decrease in activation levels affected by frequency and recency of usage (Ecke, 2004). Code-switching in this context becomes a strategy to compensate for lexical retrieval slowdown and failure in attrition and the incomplete "encoding" that results in "instable storage" (Ecke, 2004: 323). Results from Olshtain & Barzilay (1991) substantiate the claim that nouns are susceptible to attrition and subsequently result in lexical retrieval difficulties. According to Oshtain & Barzilay (1991) the basic meanings of lexical items remain intact, but loss of specificity related to such items results in a decrease in the selectional restrictions that guide the lexical retrieval path. The result in a situation where the subject is forced to search for a particular target word is significant slowdown in processing that often results in the selection of a word from the same semantic set that is considered less appropriate for the particular context.

III. The Current Study

The purpose of the current study is to ascertain areas of language loss and patterns of recovery in HLL Spanish through coding and analysis of synchronous chat transcripts from a class of beginning HLLs of Spanish at the university level. In order to approximate the goal of describing the language development of this unique population, code-switching structure was examined through classification of switches into the following categories: whole turn or complete sentence, automatized routines and discourse markers, intrasentential (more than one word), part of a word, and one word or phrase (culture specific). One word code-switches were further analyzed for part of speech and intrasentential code-switches were categorized by type of syntactic constituent. Poplack (1980) demonstrates the existence of qualitative differences between the code-switching of the balanced bilingual vs. the unbalanced bilingual evidenced in a preference by the balanced bilingual for intrasentential switches as opposed to a preference by the non-fluent bilingual for intersentential switching. Based on previous research documenting a reduction of accessibility in lexical retrieval (Olshtain & Barzilay, 1991; Ecke, 2004), a qualitative analysis including anecdotal evidence from the data regarding self-correction was also performed to ascertain slowdown or failure in such processes.

Research Questions and Hypotheses

The current study seeks to explore the question of whether Spanish HLLs whose self-assessed language dominance is English demonstrate patterns of language use consistent with the code-switching of balanced Spanish-English bilinguals or whether they instead exhibit language use patterns consistent with compensatory switching of L2 learners. Additionally, the study seeks to identify instances of loss or simplification of the HLL linguistic system as well as to describe any identifiable pattern of recovery over the course of 8 weeks of synchronous chat in Spanish 103. Based on research by Poplack (1980), I expect to find patterns of code-switching consistent with that of the non-fluent bilingual; therefore, instances of code-switching at syntactically "risky"

boundaries such as intrasentential versus intersential were not anticipated. I also hypothesized that due to low proficiency in Spanish and cognitive dominance in English, HLLs would also demonstrate compensatory code-switching described by Lüdi (2003) as "translinguistic wording" typical of language learners filling linguistic gaps in their L2 knowledge with elements from their L1 (176). Recovery of the HLL was expected to be reflected in a decrease in percentage of code-switching and/or a qualitative change in code-switching type across time. Based on psycholinguistic research in the area of lexical processing, I anticipate finding evidence in the data in the form of self-correction that would reflect a reduction of accessibility to the lexicon (Olshtain & Barzilay, 1991; Ecke, 2004).

Methods

Participants

Ten Spanish Heritage Language Learners at the University of Arizona enrolled in Spanish 103, Oral Skills for Heritage Learners, participated in the study. Participants ranged in age from 18-25. Seven participants were female and three were male. The majority of participants self-identified their socioeconomic status as middle class. One of the participants chose not to respond to the question, one self-identified as upper class and one self-identified as lower class. In regards to language proficiency, participants were asked to rate themselves in the areas of reading, writing, speaking and listening on a scale of 1-7 (from excellent to poor). Self-evaluation revealed all participants to be English dominant bilinguals. All participants were also identified by their instructor as low proficient Spanish learners, cognitively dominant in English. The majority of participants reported having had some formal schooling in Spanish, ranging from two to three years at the high school level.

Participants were asked to rate their production and amount of input in Spanish according to a frequency-based Likert scale. A majority of the students indicated that they sometimes or often speak to their grandparents in Spanish. Those who seldom or never speak to grandparents or parents in Spanish, sometimes or often use Spanish at work, at school or with at least one friend.

In the area of Spanish language input, the majority of participants are sometimes or often spoken to by parents or grandparents. One student indicated that he/she is sometimes spoken to in Spanish by at least one friend and one participant seldom received input from parents or grandparents and never from siblings or friends.

Data Collection

The data were transcripts of synchronous chat conversations collected in the College of Humanities (COH) language lab at the University of Arizona as a part of the regular course curriculum for Spanish 103. Participants met for 50 minute sessions once a week for 10 weeks. Data for 8 weeks were analyzed for the current study due to problems with the interface between

the chat program and the server resulting in the loss of 2 weeks of data at the beginning of the semester. The CMC (Computer-mediated Communication) data were anonymous in that participants were assigned numerical chat codes generated by the chat software. The CMC chat data allowed us to observe the students' natural communicative interaction in a non-threatening environment that fostered equal participation (Beauvois, 1992 and Kelm, 1992). Participant conversations were initiated by the Spanish 103 instructor and topics included childhood experiences, likes and dislikes, favorite school activities and pastimes as well as immigration issues. Students received a participation grade for all chats and were instructed to stay on task at all times. Students were not penalized for grammatical errors or the use of non-standard varieties of Spanish. They were encouraged to use Spanish as much as possible, but the use of English was considered acceptable.

In addition, each student completed a 5-10 minute language background survey eliciting information regarding language exposure, language dominance, age, gender, identity, and socio-economic class (see Appendix 1). All participation in the study was strictly voluntary.

Codification of Data

Tokens of code-switching for each participant were coded for structure resulting in the following categories: Whole turn or complete sentence, automatized routines and discourse markers, intrasentential, part of a word, one word and one word or phrase (culture-specific). For the purposes of this study a code-switch was considered any use of English during the course of the CMC chat sessions and was identified at its initial switch point from Spanish into English. All proper nouns referring to people and places were not considered instances of code-switching and were excluded from the analysis. All examples are reproduced exactly as originally produced and include the anonymous speaker chat code preceding the dialogue as well as information regarding date and class session, for identification purposes.

(a) Code-switching Structure

All tokens were coded and categorized according to unit code-switched. Analysis of the data produced the following categories: Whole turn or complete sentence, automatized routines and discourse markers, intrasentential, part of a word, one word and one word or phrase (culture-specific). The code-switched elements in all examples are italicized and immediately followed by glosses when appropriate.

In the category of *whole turn or complete sentence* "whole turn" was included with complete sentence due to the chatty nature of the written medium involved in CMC synchronous chat. Turns in the discourse, therefore, are not always obligatorily complete sentences. The following is an example of a speaker whose preceding turn was Spanish followed by a complete turn in English:

(1) *Whole turn or complete sentence*

634: *sorry if the spelling was wrong* (9.15.3)

Short one or two word *automatized routines* were coded together with *discourse markers*. Automatized routines tended to be emotion laden. An example of each follows:

(2) *Automatized routine*

633: cococes *my bad* (9.15.3)

633: you cook *my bad*

(3) *Discourse marker*

612: *peace* (9.22.1)

The *intrasentential* category consisted of switches of more than one word. For the purpose of this study, complex nouns that are lexically composed of two words were also coded in this category. Further analysis of the intrasentential switches yielded the following categories: Noun Phrase (NP), Prepositional Phrase (PP), Verb Phrase (VP), dependent clauses with and without a conjunction and miscellaneous. Tokens that did not correspond to any one identifiable constituent were coded as miscellaneous. An example of each type of intrasentential switch follows:

(4) *Noun Phrase (NP)*

615: no me gusta leche con cereal por que no me gusta *the soggy feeling* (10.20.1)

615: I don't like milk with cereal because I don't like *the soggy feeling*

(5) *Prepositional Phrase (PP)*

615: nosotros "hid" para la policia todo la dia *up in the hills* (9.22.1)

615: we "hid" for the police all the day *up in the hills*

(6) *Verb Phrase (VP)*

635: los indocumentados *do the work* que los americanos no quiere

635: The undocumented ones *do the work* that the americans don't want

(7) *Dependent clause without a conjunction*

622: este chat es muy abburido por que *the topic suck* (11.10.1)

622: this chat is very boring because *the topic suck*

(8) *Miscellaneous*

622: pero no puede change a nation en *the such little* tiempo (11.10.1)

622: but he can't change a nation in *the such little* time

Switches of *one word* were coded and further classified into the subsequent categories: Nouns, Verbs, Adjectives, Adverbs, Prepositions and Other. The only token of *Other*, a coordinate conjunction, is included in the examples that follow. Examples of each category include:

(9) *Nouns*

614: no me gusta postre, me gusta *candy* (9.15.1)

614: I don't like dessert, I like *candy*

(10) *Verbs*

635: sí, pero yo *burn* mí comida (9.15.3)

635: yes, but I *burn* my food

(11) *Adjectives*

642: de veras es muy *scandelous* (10.27.3)

642: really, it's very *scandelous*

(12) *Adverbs*

615: no, no tenía un tree grande *enough* (10.27.1)

615: no, I didn't have a tree big *enough*

(13) *Prepositions*

612: No me dormio *until* 730am (11.10.1)

612: I didn't go to bed *until* 7:30am

(14) *Other*

611: si yo fui a edge fest es *like* fall ball only in mesa (9.22.1)

611: yes I went to edge fest it is *like* fall ball only in mesa

Code-switches within the boundary of a word were coded as *part of a word*. An example of a switch of part of a word:

(15) *Part of a word*

633: todos los anos mis hermanos y yo *attend*en (11.3.3)

633: Every year my brothers and I *attend*

Code-switching of *one word or phrase* that represented a cultural practice or phenomenon specific to the United States whose equivalent is not found in the cultures of the Spanish-speaking world, were considered separately.

(16) *One word or phrase—culture specific*

621: quien fue *trick or treating* (11.3.1)

621: who went *trick or treating*

CMC (Computer-mediated Communication)

Computer-mediated-communication is accomplished through connections of either local or global networks that allow for both asynchronous and synchronous communication. Network-based language teaching connects the isolated individual interacting with the computer application to a much broader horizon of possibilities whose focus shifts to human-to-human interaction, both one-to-one and one-to-many (Kern, R.G. & Warschauer, M., 2000). Synchronous chat software like that used in the current study allows students seated at individual computer terminals that are linked as an electronic network to communicate simultaneously, in real time choosing when and to whom to respond.

CMC is described as "chatty" written discourse that takes on the characteristics of both oral discourse (light style, quick topic shifts, digressions) and written discourse (graphic form, composition, reflection, editing) (Smith, 2003). Given the inherent chatty nature of such discourse decisions regarding codification were made on the basis of discourse context, taking into account that this style of communication permits quick and incomplete written responses that resemble spoken dialogue.

Results and Discussion

A total of 403 tokens of instances of code-switching were extracted from the data and coded according to type of unit switched. Table 1 shows the total number of tokens for each category as well as the total number of code-switches per week.

Table 1: Code-switching structure

Week	1-2	3-4	5-6	7-8	Category Totals
Whole turn or complete sentence	14	9	17	23	**63**
Automatized routines and discourse markers	13	9	19	5	**46**
Intrasentential	20	24	24	21	**89**
Part of a word	2	2	2	3	**9**
One word	41	39	54	32	**166**
One word or phrase—culture specific	17	4	2	7	**30**
Weekly Totals	**107**	**87**	**118**	**91**	**N=403**

The prevalence of one word switches (N=166) corroborates findings in various studies (Poplack, 1980; Lipski, 1985; Zentella, 1997), and it would seem reasonable that one word elements should prove to be the simplest to insert from the cognitively-dominant Language A into the corresponding

slot of the weaker Language B. Since the HLLs in this study are considered unbalanced bilinguals, it should be expected that switching should occur extra-sententially, which, according to Poplack (1980) does not require such extensive knowledge of both of the grammars involved. However, it is interesting to observe that the next frequently-switched category includes intrasentential switches which account for 22% of the total switches. Research has demonstrated that it is the preference of the highly skilled balanced bilingual to switch within the sentence boundary (Poplack, 1980, Troike, 2005).

Automatized routines and discourse markers accounted for 11% of the total switches to English and can be seen as a reflection of cognitive dominance in English. These results, however, appear to contradict the results of the intrasentential switching that suggest this population resembles the more balanced bilingual. In Poplack (1980) Spanish-dominant individuals demonstrated a preference for switching from English into Spanish for tags and interjections. It is obvious that the situation of the HLL is complex in nature and further study investigating the cognitive organization of the linguistic systems is needed.

The 89 tokens of intrasentential switching that accounted for 22% of the total number of code-switches were further analyzed. Table 2 shows the total number of tokens for each of the resulting categories and Table 3 shows weekly intrasentential switching totals.

Table 2: Intrasentential Switches by type:

NP	PP	VP	Independent Clauses (a) w/conj (b)w/o conj	Dependent Clauses (a) w/ conj (b) w/o conj	Miscellaneous
42	6	13	1	28	14

Table 3: Total intersentential switches by week

Weeks 1-2	Weeks 3-4	Weeks 5-6	Weeks 7-8
18	23	24	20

The high number of Noun Phrases and Dependent clauses support findings of Poplack (1980) that demonstrate a tendency toward the switching of major constituents as opposed to smaller ones. According to Poplack (1980) this provides support for the equivalence constraint that predicts that "whole constituents will be switched rather than elements within them if the syntactic rule for generating the constituent is not shared by both L1 and L2" (603).

A total of 166 instances of one word switches were extracted from the total number of code-switches and further analyzed. Table 4 shows the totals for the resulting categories and Table 5 shows the total number of one word switches per week.

Table 4: One Word Switches by type

Nouns	Verbs	Adjectives	Adverbs	Prepositions	Other
100	18	30	5	11	2

Table 5: Total one word switches by week

Weeks 1-2	**Weeks 3-4**	**Weeks 5-6**	**Weeks 7-8**
41	**39**	**54**	**32**

Noun switches account for more than half of the total number of one word switches (N=100). Nouns are not only among the most frequently-switched lexical items among both the balanced and the unbalanced bilingual speaker, but Nouns are also identified by Obler (1982) as elements particularly vulnerable to language attrition. According to Olshtain & Barzilay (1991) accessibility difficulties result in the generation of a smaller candidate set slowing down or causing erroneous selection to occur during the lexical retrieval process. Findings from their study of 15 Americans living in Israel for a considerable length of time support the notion that Nouns are susceptible to retrieval slowdown and incorrect selection would seem to be supported here with the high number of Noun switches evidenced in the data (Olshtain & Barzilay, 1991).

It is surprising to find that Adjectives account for 18% of the total number of switches, second only to Nouns, since various studies of Spanish-English code-switching have demonstrated that Adjectives along with Prepositions are among the most infrequently-switched elements (Poplack, 1980; Lipski, 1985; Zentella, 1997). Perhaps this finding offers more evidence of language loss due to contact with English in an English-dominant society. A more detailed examination of switch points and types of adjectives would provide yet another glimpse into the complexities that characterize the HLL speaker.

In addition, a qualitative analysis of instances of self-corrections was performed. Quantification of such occurrences was not performed in the current study; however, the following example provides evidence of attrition or at least some instability of the system that has lead to a slow down in lexical retrieval, resulting in a code-switch to English for the needed lexical item:

(17) 622: fui basquetbol *in* collegio (11.3.1)
622: *en*

622: I was basketball *in* college
622: *in (Spanish)*

This example provides evidence of compensatory code-switching; however, it is clear that the lexical item is not lost, because the speaker provides the code-switched preposition in the turn immediately following the production of the first sentence. There appears to have merely been a

lag in retrieval during online processing of the original utterance that resulted in the insertion of the English equivalent due to ease of access of the cognitively dominant language.

Further evidence of processing difficulty in lexical retrieval can be observed in examples (18) and (19) that involve the mappings between form and meaning.

(18) 634: por que yo y mi novio tenemos un *pelegroso* y nosotros almost broke up
634: because I and my boyfriend had a *dangerous* and we almost broke up

The obvious intended meaning of the word *pelegroso* in this sentence is *fight*. Fight in Spanish is *pelea* and the correct form of the word dangerous is *peligroso*. Thus, it appears this speaker has erroneously accessed a word similar in form but not meaning. Another example of such phenomenon involves difficulty in retrieval of meaning of a word in interpreting a question about favorite foods:

(19) 611: mi comidas favoritas son los *comidas* "slapstick"
611: my favorite *foods* are "slapstick" foods

In processing the lexical item *comidas* (foods), speaker 611 has erroneously accessed the meaning of an orthographically similar word, *comedias* (comedies) and is immediately made aware of the error by means of a request for clarification by another speaker in the chat. It is also interesting to note that in both examples (18) and (19) retrieval failure did not result in the selection of a strictly semantically-related word as would have been predicted by the results of Oshtain & Barzilay (1991).

IV. Conclusions and Suggestions for Future Research

Research has been conducted in SLA involving learners of Spanish ranging from beginner to advanced levels, as well as in bilingual communities in situations of language contact; however, research pertaining to language development within the HLL population along the American Southwest border is still somewhat lacking. The current study offers a window into the complexities of the linguistic development of the HLL of Spanish, contributing to this gap in research.

The data on code-switching patterns for this group provide conflicting evidence that characterizes this particular group of HLLs as both the balanced bilingual and the unbalanced bilingual. While the data show surprisingly high numbers of intrasentential code-switching that adheres to grammatical constraints, there are also high numbers of Noun switches and Adjective switches. The Noun code-switching tendency could be accounted for in light of prior research in language attrition that has shown Nouns to be particularly susceptible to loss (Obler, 1982). The Adjective switches along with the miscellaneous switches that did not conform to current grammatical constraints can be explained as a function of cognitive dominance in English. Even the self-reported language proficiency levels reflect English as the cognitively dominant language among the overwhelming majority of these learners. However, a more detailed analysis of the tokens that fell into the miscellaneous category is in order. Perhaps these instances, while not conforming to accepted grammatical norms, in fact reflect the underlying cognitive processes and offer support for parallel processing of both languages in the bilingual as has been suggested by

prior research (Troike, 2005; Ecke, 2004).

Given that these HLL learners are immersed in an environment where English is the social and academic language of dominance, the Spanish system is susceptible to linguistic changes and simplifications at an accelerated rate compared to that of monolingual communities. This study considers extralinguistic factors qualitatively. However, in order to gather more firm and conclusive evidence as to the influence of contact with English, quantitative data in this area directly correlating more objective measures of language proficiency and dominance with individual speaker data is imperative for future research.

The current study limited itself to the 10 most interesting cases of low proficient students, thus conclusions at this point are somewhat tentative pending future studies comparing this population to a highly proficient group at the103 level. An even more in-depth approach with the potential for unlocking the mystery of the organization of the bilingual mind would involve comparing both of these groups to advanced Heritage Language Learners and also to intermediate-to advanced groups of L2 learners.

Further insight into the language processing and development of this unique population might also be offered by an analysis of language-specific word order. Anecdotally observed in the data were instances where one speaker turn resembles Spanish syntactic word order with code-switches to English while later in the discourse the same speaker in a different turn appears to be using an English syntactic framework into which he/she inserts Spanish words. For example:

(20) 621: es *cute* nombre (10.20.1)
621: it is *cute* name

In this example the only word switched to English is the adjective *cute*; however, the word order reflects English syntax as the adjective precedes the noun it describes. In Spanish, word order is more flexible allowing pre and post positioning; however, only those adjectives that quantify precede the noun. Thus, the standard grammatical form of this sentence in Spanish would be as follows:

(21) Es un nombre *mono*.
It is a name *cute*.

Several turns later, in a discussion of Ninja Turtles, the speaker produces the following sentence indicating that of all the Turtles, she prefers the orange one:

(22) 621: el *turtle* de *orange* (10.20.1)
621: the *turtle* of *orange*

The speaker has code-switched to English for the noun *turtle* and the adjective *orange*, yet has maintained Spanish word order with the common use of the preposition *de* (of) for modification of a noun. In this case, the closed-class elements are maintained in Spanish along with the Spanish syntactic word order.

It is also worth mentioning the omission of closed-class elements as is evidenced in example (20). Even though speaker 621 has adopted English word order, he/she has omitted the indefinite article "a" that is required in both Spanish and English syntax. A study of use of determiners and

other closed-class items compared to open-class elements could also potentially provide further insight into the cognitive representations and organizations of both languages in the mind of a HLL of Spanish growing up in the U.S.

Appendix A

Language Background Survey CHAT CODE_____

QUESTIONNAIRE OF SPANISH HERITAGE
LANGUAGE LEARNERS

I would like your help answering some questions concerning your experiences with the Spanish. There are no right or wrong answers. Please respond honestly, as only this will guarantee the success of the investigation!

THANK YOU

LANGUAGE CONTACT WITH SPANISH

A-In this section, please place a checkmark "X" in the box that is appropriate for you.

1-Do you <u>speak</u> in Spanish in any of the following contexts?

	OFTEN	SOMETIMES	SELDOM	NEVER
with your mother, father or both				
with your grandparents				
with your siblings				
with at least one of your friends				
at work				
at school				

2-Do the following people <u>talk to you</u> in Spanish?

	OFTEN	SOMETIMES	SELDOM	NEVER
your mother, father or both				
your grandparents				
your siblings				
at least one of your friends				

3-Do you do any of the following?

	OFTEN	SOMETIMES	SELDOM	NEVER
1-Do you view any TV in Spanish?				
2-Do you listen to any Spanish radio?				

B- Please indicate whether you *strongly agree, agree, disagree or strongly disagree* with the following statements.

	Strongly agree	Agree	Disagree	Strongly disagree
1- I enjoy listening to Spanish.				
2- Speaking Spanish and being Hispanic are not connected at all.				
3- I associate Spanish with low economic status.				
4- Using both Spanish and English in a single sentence is normal.				
5- I like being identified as a member of the Hispanic community.				
6- I am proud of my Hispanic culture.				
7- I associate Spanish with prestige.				
8- Learning Spanish will bring me closer to my relatives and friends.				
9- It sounds uneducated when people switch between two languages.				

Self Evaluation

1. Please rate your languages on a scale of 1 to 7.

   1 = excellent, 4 = average (eg. You can get by ok), 7 = poor

Language	Speaking	Understanding Speech	Reading	Writing
1.English				
2.Spanish				
3.				

2. Circle the term below that you feel best describes your socioeconomic class.

   Upper Class Middle Class Lower Class

3. Please circle your age range below.

   16-20 21-25 26-30 31 or older

4. Please indicate your sex. ____Female ____Male

5. Have you had formal schooling in Spanish? If so, for how long and where?

   _____

By completing and returning this survey I grant permission for the above information and my Spansh 103 chat transcripts from August 23-December 8 during the Fall semester of 2004 to be used by the investigators for research purposes.

GRACIAS

Appendix B
SAMPLE CHAT TRANSCRIPT

Wednesday, September 15, 2004 1PM Class

Channel 3
610 (13:15:52): Connected & Entered Channel 3
616 (13:15:56): hola hola, que te pasa calabaza
609 (13:16:18): Connected & Entered Channel 3
610 (13:16:27): buenos dias
622 (13:16:27): Connected & Entered Channel 3
616 (13:17:42): bien, creo que tacos o enchillada estan mas sabrosa de todas las comidas del mundo
616 (13:17:52): enchiladas*
610 (13:17:52): me gusta a cocinar
622 (13:18:6): Encuentro que las enchiladas son mas bueno que todos
622 (13:18:10): de pollo
616 (13:18:21): no me gusta cocinar mucho pero me gusta comer muchísimo
609 (13:18:30): mi comida favoritos son mexicano y italiano
622 (13:18:48): Yo cocino arroz mal
622 (13:18:52): pobre yo
616 (13:19:11): ojala que tenga una esposa que puede cocinar...porque no puedo cocinar para nada
609 (13:19:18): la mejor de todo es tamales
616 (13:19:22): pueda*
610 (13:19:46): mi comida favorita es mexicano
616 (13:20:2): cual tipo de tamales?
616 (13:20:20): carne de res? carne de pollo? carne de puerco?(pig)
609 (13:20:21): casi todos
610 (13:20:26): me gusta tamales tambien, pero mejor enchiladas
622 (13:20:48): Para las celbraciones mis familia y yo comemos tamales
622 (13:20:54): clebraciones
622 (13:21:2): celebraciones
616 (13:21:28): si mi mama cocinio tamales muy deliciosa
609 (13:21:28): yo no puedo cocinar para nada y no gusta salmon para nada
609 (13:21:42): mi mama tambien
616 (13:22:2): mi mama cocinio tamales mas deliciosa
610 (13:22:5): mi mama no puedo cocinar tamales
622 (13:22:14): Aqui no como bien

622 (13:22:26): Solo McDonalds y Wendys
609 (13:22:50): Para la Navidad mi familia cocinen tamales
616 (13:22:52): hola
622 (13:23:14): no es bueno para su salud
616 (13:23:17): mi computadora no funciona
616 (13:23:20): lo siento
622 (13:23:29): que lastima
622 (13:24:49): No como desayuno mucho
609 (13:24:53): tipicamente como cereal para el desayuno
616 (13:24:58): Connected & Entered Channel 3
616 (13:25:3): hola
622 (13:25:7): porque me gusta dormir
622 (13:25:26): Estas rosa
609 (13:25:49): se que 610 come chickfila para el almuerzo
616 (13:26:20): yum, chickfile oye deliciosa ahorra
616 (13:26:30): oye?(sounds)
610 (13:26:33): se
622 (13:26:34): me gusta los....fries
609 (13:26:37): son dos 616s o que
610 (13:26:41): yo tambien
0 (13:26:42): Uds deben invertir (invest) dinero en Chick-Filet
616 (13:26:42): si, lol
610 (13:26:56): si
622 (13:27:10): jajaja
622 (13:27:49): Yo cocino pero mi mama (by Far) es la mejor
616 (13:28:9): bien, la comida de mexicana son el mejor, y cual tipo de comida es segunda?
610 (13:28:13): mi mama dosen't let me cook
609 (13:28:16): el mejor cocinero en mi vida es mi mama
622 (13:28:22): Italiano
622 (13:28:28): Es muy bueno
622 (13:28:37): lasanga
616 (13:28:38): italiano es bueno pero aye mas "carbohydrates"
622 (13:28:48): es la verdad
610 (13:28:59): mi mama es el mejor cocinero
616 (13:29:11): en mi opinion tres quesos y un noodle es muy sabrosa
622 (13:29:15): pero todos que estan bueno tienen carbohydrates
609 (13:29:39): que mal que hay tantos carbs en comida italiano
616 (13:29:42): y me gusta la lasagna vegetal muchísimo

610 (13:30:18): yo mi gusta a comer, y no one is going to tell me not to because of carbs
616 (13:30:31): en mi opinion carbs son buenos, y especialemente si eres un deportista
609 (13:30:48): en serio
616 (13:30:58): lol, amy eres muy chistosa
616 (13:31:11): es*
610 (13:31:17): que es chistosa?
622 (13:31:23): yo creo que la pastel de queso es mas bueno que todos los tipos de postre en el mundo
622 (13:31:32): de nueve york
0 (13:32:21): Yo no creo en un dieta que te permite comer mucha carne y pocas verduras
0 (13:32:25): parece mal para la salud
616 (13:32:34): si la pastel de queso es bueno pero me gusta un pastel con fresca (strawberrys?)
622 (13:32:45): yo tambien
616 (13:32:52): pastel con fresca mas...
622 (13:33:31): me gusta frescas mas de todos frutas
622 (13:33:41): gustan
616 (13:33:45): mi comida favorita esta la comida de japon
616 (13:33:49): japonesa*
610 (13:34:7): yo tambien, me gusta frescas mas de todos frutas
622 (13:34:10): solo me gusta panda express
610 (13:34:28): no gusta panda express
609 (13:34:32): me gusta comida de japon tambien
616 (13:34:38): a mi me gustan kiwis mas de todas las frutas
616 (13:34:54): No me gusta mariscos para nada
610 (13:34:56): no gusta asian comeda
622 (13:34:57): porque por que amy
610 (13:35:4): que?
622 (13:35:9): jajaja
622 (13:35:19): because why
610 (13:35:27): I just don't
609 (13:35:34): de frutas me gusta melón
610 (13:35:35): never have
616 (13:35:48): cual tipo de melón
622 (13:36:7): Es un broma
609 (13:36:16): watermelon
616 (13:36:25): broma? que significa
622 (13:36:30): es más bueno
622 (13:36:42): joke

616 (13:36:54): oh, lol
610 (13:36:54): me gusta watermelon tambien, nosotros tienen so much in common
610 (13:37:7): we should start a club
622 (13:37:8): es la verdad
609 (13:37:10): que bueno
616 (13:37:14): es seguro
609 (13:37:22): la club de melón
622 (13:37:31): nombre de club
610 (13:37:45): Exited
616 (13:37:45): quien es el presidente?
622 (13:37:45): adios
609 (13:37:48): adios
616 (13:37:50): ok
616 (13:37:53): hasta luego
622 (13:37:53): Exited
609 (13:37:57): Exited
616 (13:38:16): paz despues

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