

The interactional and syntactic importance of prosody in Spanish-English bilingual discourse

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Abstract

This paper highlights prosody as a fundamental feature of bilingual conversation. My data show that syntactic structure does not impose constraints on codeswitching, as one prevalent line of inquiry regarding codeswitching claims, but rather certain discourse structures make codeswitching at any given point more or less cognitively and interactionally profitable according to conversationalists' ability to produce and comprehend information.

Key words

codeswitching

completion points

Intonation Unit

My corpus consists of one hour of conversational data from four competent bilinguals of Mexican heritage living in Southern California yielding a total of 782 analyzable units. Using the transcription methods developed by Du Bois, Schuetze-Coburn, Paolino, and Cumming, (1993) wherein each line of transcription consists of one Intonation Unit (Chafe, 1979, 1987, 1993, 1994), the prevalent pattern which emerged was one in which speakers overwhelmingly switched at Intonation Unit boundaries. Using what I have termed the Switch-Boundary Intonation Unit (SBIU) as my unit of analysis and adapting the notion of completion points (Ford and Thompson, 1996; Sacks, Schegloff, & Jefferson, 1974), I examine intonation contour type, syntactic completion and constituency, and pragmatic completion in order to best characterize the codeswitching frame.

1 Introduction

The phenomenon of codeswitching, the alternation between two or more languages in a single conversation, has attracted the attention of scholars for nearly a century. Early work on bilingualism claimed that codeswitching was not governed by systematic rules; however, linguists now agree that this early claim is incorrect. Yet many questions remain regarding the precise nature of codeswitching rules and structure.

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The principal direction in which codeswitching research, on this issue, has developed concerns syntactic constraints on switching. This line of inquiry has postulated grammatical rules and specific syntactic boundaries for where and why a switch may occur. In this approach syntactic rules regarding constituent structure would be invoked, for example, to explain the three switch boundaries in example (1a), in which the speaker, a fluent Spanish/English bilingual, is discussing salsa dancing.

- (1a) *Entonces, le dijo*,(.6) the way I see it *y que me agarra lo = se-- y- yo pues yo ...*
n = o mas lo sigo, because I don't know.

'Well then, she told him',(.6) the way I see it, and he should just grab me, I know--
 I- I well I... I simply follow, because I don't know how'

I argue in this article that although appealing to the notion of syntactic constituency tells us a great deal about the types of boundaries where speakers tend to codeswitch, we can provide a much more complete account of codeswitching structure if prosody is given a central role in the analysis. In example (1b), which reformats the data from (1a) so that each line represents a single prosodic unit, every switch occurs not just at a syntactic boundary, but also and more fundamentally at a prosodic boundary.

- (1b) a. *Entonces*,
 'Well then'
 b. *le dijo*,
 'she told him'
 c. ...(.6) the way I see it,
 d. *y que me agarra*,
 'and he should just grab me'
 e. *lo = se--*
 'I know'
 f. *y- yo pues yo*,
 'I- I well I'
 g. ... *n = o mas lo sigo*,
 'I simply follow him'
 h. because I don't know.

In discourse analysis, certain kinds of prosodic units have been identified as having important cognitive and interactional features. The following analysis considers such prosodic units in bilingual discourse in order to illuminate patterns that are missed when analyzing syntax alone. I argue that syntax cannot account fully for the complexity of bilingual grammar, just as it cannot account fully for the complexity of monolingual grammar. This is especially true when the analyst relies solely on traditional constituent structure as the means of segmenting talk into analyzable chunks. By segmenting talk into prosodic units the researcher is able to scrutinize the interface between syntax, interaction, and cognition. The questions that underlie my analysis are: Do prosodic units correlate with codeswitching boundaries? And if so, what are the syntactic and interactional features of such units?

In the discussion that follows, I describe the syntactic composition of the prosodic units in my corpus, a collection of conversations among Spanish/English bilinguals, and demonstrate that the fundamental unit of constituent structure, the clause, is not an adequate unit of analysis to capture the interactional nature of such prosodic units. I then turn to the cognitive and interactional features of these prosodic units. I show that certain units at switch boundaries have a particular syntactic and prosodic composition and carry a heavy information load. I then show that other units lacking this particular syntactic and prosodic configuration operate at a more discourse-pragmatic level, than do the substantive units, and carry a light information load.

2 Background

As early as 1917 Espinosa claimed that the Spanish language in New Mexico, with its frequent English lexical and phrasal alternations, did not follow regular laws, and as late as the 1970s, Labov (1971) and Lance (1975) suggested that there are no restrictions on the grammaticality of the codeswitched language of Spanish/English bilinguals. The recognition of codeswitching as a systematic phenomenon was an important advance. As noted above, research on the structure of codeswitching has focused on rule-governed theories hypothesized to constrain codeswitching. Beginning in the 1970s other researchers began making observations that suggested a rule-governed system is at work, and scholars have since focused on possible influential factors in patterns of codeswitching by highlighting the rule-governed structural regularities that may predict points at which codeswitching occurs (Aguirre, 1976; Alvarez, 1991; Gringás, 1974; Gumperz, 1976; Gumperz & Hernández-Chávez, 1975; Lipski, 1985; McClure, 1977; Pfaff, 1979; Poplack, 1980, 1981; Reyes, 1974; Timm, 1975; Torres, 1992; Wentz & McClure, 1977, 1977; Zentella, 1982, 1997).

2.1

Syntactic approaches to codeswitching

The relevant level of linguistic structure within these approaches is syntax. In particular, the linear equivalency of constituent ordering has been claimed to constrain codeswitching. This view was first formalized by Poplack with her *Equivalence Constraint* (1980), and then refined in Sankoff and Poplack (1981).

Some possible switch sites according to the Equivalence Constraint (adapted from Winford, 2003):

- between subject and verb
- between verb and object NP, not including object pronouns
- between verb and subordinate, coordinate, complement and relative clauses
- between verb and predicate adjective and nominals
- between auxiliary and verb
- between preposition and NP

Prohibited switch sites include:

- between adjective and head noun

- between verb and object pronouns
- between negative particle and finite verb

It was not long before counterexamples and criticisms of the Equivalence Constraint began to appear. These criticisms primarily came from researchers working on code-switching that involved typologically dissimilar languages (e.g., Bentahila (1983) account of Moroccan Arabic and French; Hill & Hill's (1986) account of Spanish and Mexicano; Myers-Scotton's (1992) account of Swahili and English; and Romaine's (1989) account of Panjabi and English). In more current work Poplack, Sankoff and colleagues have developed a four-way typology of codeswitching: (1) codeswitching under equivalence; (2) (nonce) borrowing; (3) constituent-insertion; and (4) flagged switching (e.g., Poplack & Sankoff, 1988; Poplack, Sankoff, & Miller, 1988; Sankoff, Poplack, & Vanniarajan, 1990).

In 'codeswitching under equivalence', the syntax of both participating languages remains intact; conversely, '(nonce) borrowings', according to Poplack and her colleagues, are all single-word switches that involve the syntax of only one language. The third category, 'constituent insertion', must be called upon when the conditions for equivalence are not met and the switch involves no more and no less than one syntactic constituent. Embedded within the 'constituent insertion' category of switch types is the notion of a governing language. Under this notion, the syntactic rules of both participating languages do not need to be met because only one grammar is activated. This governing language has been referred to as the "base language" by Poplack and the "matrix language" by Myers-Scotton. Likewise, Poplack's 'constituent insertion' category corresponds quite nicely to Myers-Scotton's (1993b, 2002) 'Language Islands' and to Muysken's (2000) category of 'Insertion'.

Poplack's last category, 'flagged switching' (also called "flagged alternation"), refers to a switch that has been accompanied by a discourse marker, a pause, or a redundant or repetitive component such as certain uses of pronouns. Muysken characterizes flagging as a process of inserting a "dummy word" to help resolve conflicts of linearization and as "revealing the hesitation of speakers to mix intrasententially... (perhaps due to strong pressures to produce monolingual, pure sentences or, to use Grosjean's terms, stay in monolingual mode)" (Muysken, 2000, p. 106). An important issue is raised here. If we accept this definition of flagging, then discourse markers, pauses, and elements like resumptive pronouns that are produced during a string of monolingual speech must be analyzed as functionally and qualitatively different from those produced during bilingual speech, yet no studies exist that would compel one to make this functional distinction. However, there are numerous studies which substantiate the interactional systematicity of discourse particles (Jucker & Ziv, 1998; Lenk, 1998; Schiffrin, 1987), pauses (e.g., Pomerantz, 1979; Wei & Milory, 1995), and repetition (e.g., Tannen, 1989), as well as a body of work on the form and function of repair phenomena (Fox, Hayashi, & Jasperson, 1996; Fox & Jasperson, 1995; Hockett, 1967; Schegloff, 1979). In my analysis, I suggest that discourse elements in bilingual speech operate in the same interactional capacity as they do in monolingual speech, namely, to guide speakers' inferences and interpretations of the conversational action via coherence relations. That these discourse elements can also be at the boundary of a switch in languages is not a result of attempting "to stay in monolingual mode," but is

a product of the interface between cognition and interaction, which can be seen in the syntactic and prosodic structure of all discourse, not just bilingual discourse.

Due to the abundance of specific constraints and the scarcity of general constraints proposed in the literature, some researchers have taken a relativistic approach by claiming that no constraints cover all possible types. In an attempt to bridge the various approaches to codeswitching, Muysken has developed a taxonomy of codeswitching behavior that is in part dependent on the typological similarities of the participating languages. He claims that the different models and approaches correspond to different phenomena — insertion into a matrix or base language, alternation between languages, and congruent lexicalization — for which he gives criteria for a three-way structural distinction (Muysken, 2000, pp. 3–4). Muysken's three-way typology attempts to draw a direct connection between the structural aspects of the participating languages and the codeswitching type. That is to say, each of the above phenomena in typologically similar languages will appear differently and have different frequencies of appearance than in codeswitching between languages that are typologically dissimilar. It is important to note that Muysken's insertion category, like Myers-Scotton's language islands, and Poplack's linear equivalency, assumes a generative model of syntactic constituency. However, as will be shown in my analysis, upon closer examination of discourse data the notion of a constituent is not always clear-cut, and this problem points to the need for discourse-functionalist approaches to codeswitching.

In contrast to insertion in Muysken's framework, alternation types of codeswitching typically occur between languages with similar typological features, such as Spanish and English. Within the category of alternation are syntactically non-nested and multi-constituent fragments, which can be seen in example (2).

- (2) je telephone à Chantal, he, [*meestal*] [*voor commieskes te doen*] [*en eten*]
 'I call Chantal, hm, /mostly to go shopping and eat.'
 (French/Dutch; Treffers-Daller, 1994, p. 213)

The above example is used by Muysken to illustrate several switched constituents in a sequence, indicative of the alternation-style of codeswitching. Although it is arguable whether *en eten* 'and eat' is in fact a separate constituent from *voor commieskes te doen* 'to go shopping', the schematic representation of alternation is nevertheless clear.

- (3) *bij mijn broer* (A)/ *y a un ascensor* (B)/ *en alles* (A)
 'At my brother's place (A)/ there is an elevator (B)/ and everything' (A)
 (French/Dutch; Treffers-Daller, 1994, p. 213)

The alternation in example (3) demonstrates what Muysken refers to as "non-nested A..... B..... A sequences," wherein the two A portions have no syntactic relationship. Some other alternation type switches include discourse markers, clefting, left and right-dislocation, and correction and repair, to name a few. My bilingual corpus is rich with these types of "alternation" codeswitches.

Muysken's last category, 'congruent lexicalization', is the most restrictive in the possible range of participating languages and is reserved for closely related languages. In relating congruent lexicalization to Spanish/English codeswitching, Muysken draws on Moyer's (1992) work carried out in Gibraltar. He asserts that in many cases of

congruent lexicalization “it is as if the grammatical switch does not correspond to the lexical switch” (Muysken, 2000, p. 147). This is due to the observation that lexical expressions are often sites of switching.

(4)a. to take disciplinary action

El government ha dicho que si es necesario tomarán disciplinary action contra ellos.

‘The government has said that it is necessary to take disciplinary action against them.’

b. be back to square one

Si todavía estamos back to square one en verdad en caso de esta mujer.

‘If we are really back to square one in the case of this woman.’

The above examples are interesting in that they also meet the criteria for alternation. It seems that the principal difference between alternation and congruent lexicalization here is the notion of a collocation or lexical expression. As discourse-functional linguists have shown (e.g., Bybee, 2001; Bybee & Hopper, 2001; Bybee & Thompson, 1997; Thompson, 2002), in order to establish the existence of a collocation, a lexical expression, or a syntactic construction with vacant slots waiting to be filled with lexical material, the analyst must use a frequency-based analysis. Nonetheless, the role of syntactic constructions, as opposed to syntactic constituents, in bilingual discourse has been little studied. Muysken’s explanation for this is as follows:

First, frequency may result from the conventionalization of a certain type of mixing pattern, rather than from a crucial grammatical factor. Second, we do not know enough about the relation between frequency distributions of specific grammatical patterns in monolingual speech data and properties of the grammar to handle frequency in bilingual data with any assurance. (2000, p. 29)

It is not clear, however, why frequency effects in monolingual discourse would need to be treated differently from those in bilingual discourse. Rather than distancing bilingual discourse from other kinds, it seems reasonable to propose that everything we know about frequency applies to conversational discourse in general. Obviously, there are specialized styles of discourse which fall beneath the research rubric of discourse genres that may very well resist certain frequency effects and other discourse level processes that help shape grammar (e.g., ceremonial or legal talk). My point here is that although congruent lexicalization appears to be qualitatively different from the other types of codeswitching discussed by Muysken, bilingual discourse should not be interpreted to be a different *genre* of talk, nor should it be reified or positioned as derivative of monolingual discourse.

I argue in this article that when looked at as a holistic unit, complete with discourse markers, false starts, repairs, and other “messy” conversational elements, bilingual discourse operates according to the same discourse structures as does monolingual discourse. My data show that syntactic structure does not impose constraints on codeswitching, but rather certain discourse structures make codeswitching at any given point more or less cognitively and interactionally profitable according to conversationalists’ ability to produce and comprehend information. This finding forces a reconsideration

of the appropriate level of structure to which researchers of codeswitching should direct their attention. Rather than limiting analyses to syntax, scholars must also take into account discourse structure.

3 Intonation Units and codeswitching

As stated previously, the majority of research regarding the structure of Spanish/English codeswitching has been framed in syntactic terms. A streamlined revision of this argument is as follows: a switch site is constrained so that the syntactic rules of the participating languages are not violated during the switch. In other words, speakers switch at units that are syntactic constituents. This tradition of codeswitching research has produced numerous studies which have significantly advanced our knowledge of the relationship between codeswitching and syntax. In this study, I investigate the equally important relationship between codeswitching and discourse.

The relationship between syntax and discourse is a topic of expanding interest in the field of linguistics. In fact, the apparent forming and shaping of syntactic structures and grammatical components via discourse has led some linguists to consider grammar itself a by-product of discourse (e.g., Bybee, 1994, 2001; Du Bois, 1987; Hopper, 1987, 1988; Mithun, 1996; Mithun & Chafe, 1999; Thompson, 1997). At the very least, most discourse-functional linguists would agree that grammar is governed to some degree by discourse, and that discourse in turn is governed by contextualized communication. If this is the case, as I assume in the present discussion, it follows that the syntax of bilingual codeswitching is rooted in discourse, and that the attested syntactic constraints observed in the data are very likely epiphenomenal patterns subject to the workings of discourse. What this means is that the syntactic units proposed to correlate with codeswitching should be reinterpreted as, not the driving force that constrains codeswitching, but rather as consequence of more global discourse processes. What are the analyzable discourse units onto which syntax maps, and which correlate with codeswitching? I have found that Intonation Units (IU) correlate in this way, which I define in more detail in the following section. Here I consider some of the consequences of this finding.

My research shows that there is a strong correlation between codeswitching and Intonation Units. In fact, the correlation is so robust that a structural analysis of the prosodic units of discourse in bilingual conversation may serve to illuminate a possible basis for why some syntactic constraints proposed in the literature are exacting while others are more flexible, with many attested counterexamples. One very likely candidate to demonstrate this point is the proposed constraint on codeswitching between the Spanish object pronoun and its verb because Spanish object pronouns precede the verb, and English object pronouns follow the verb. In my corpus Spanish object pronouns and their verbs are never split across two Intonation Units. In other words, object pronouns and the following verb occur in the same (monolingual Spanish) Intonation Unit one hundred percent of the time. I suggest that rather than a syntactic constraint operating in this environment, that there is a strong prosodic tendency to keep the object pronoun and the verb together in the same Intonation Unit.

In the following discussion, I first characterize the concept of an Intonation Unit, and then present a quantitative analysis of the data. Finally, I demonstrate that by

appealing to the Intonation Unit, clear cognitive and interactional motivations emerge that are lost when examining the role of syntax alone.

3.1

The unit of analysis

The Intonation Unit has been characterized as “a sequence of words combined under a single, coherent intonational contour” (Chafe, 1987, p. 22) that “play(s) an important functional role in the production and comprehension of language” (Chafe, 1994, p. 62). It has been compared to other prosodic units such as the “tone group” and “information unit” (Halliday, 1967, 1985), the “tone unit” (Brazil, 1985; Crystal, 1969, 1975) and the “intonational phrase” (Nespor & Vogel, 1983; Selkirk, 1984). The unit of analysis used in the present study is the Intonation Unit (Chafe, 1979, 1987, 1993, 1994), which, although conceptually similar, is formally distinct from the other units just mentioned. For example, a single Intonation Unit (IU) can have more than one primary accent, and although pauses frequently delimit IU boundaries, they can also be found within the Intonation Unit.

The features that are involved in identifying Intonation Units (henceforth IUs) include (a) changes in fundamental frequency, (F0), referred to as pitch-reset, (b) changes in word duration, perceived as lengthened at the end of an IU and shortened, rushed segments at the beginning, (c) changes in intensity, recognized as loudness, (d) pauses of different lengths, and (e) changes in voice quality, frequently perceived as creak (Chafe, 1994; Du Bois et al. 1993). IUs are not acoustically measured units, but perceptual, auditory units.

The gestalt perception of a “coherent intonation contour” itself is difficult to quantify directly, but empirical evidence suggests that this is not necessary. In other words, while not all of the prosodic features that may be present in the signal are individually attended to in the transcription system, the segmentation process *is* sensitive to factors which contribute to the perception of a phrasal-level contour gestalt, and cues that are important for the segmentation of each phrase are noted. (Schuetze-Coburn et al. 1991).

In segmenting the data into IUs I frequently found two primary cues, pitch reset and change in word duration, commonly referred to as “anacrusis” (Cruttenden, 1986), at the beginning of a new IU. One of these primary cues plus one of the secondary cues, such as creaky voice, pause, or length allowed for a consistent and accurate method for identifying IUs.

Chafe (1993, 1994) identifies three major types of IUs: those that *regulate* the interactional flow of discourse, those that contribute *substantive* ideas, and those that are *fragmented*. Regulatory IUs can be further broken down into four functional subtypes: textual, interactional, cognitive, and validational. Example 5 from my data illustrates all these types and subtypes.

- | | | | | |
|-----|----|-------|---------------------|----------------------|
| (5) | 1. | Etta: | Yeah, | (Regulatory/Textual) |
| | 2. | | big, big bands are- | (Fragmentary) |
| | 3. | | are going there. | (Substantive) |
| | 4. | | [Yeah], | (Regulatory/Textual) |

-
- | | | | |
|-----|-------|--|----------------------------|
| 5. | Ana: | [Yeah]. | (Regulatory/Interactional) |
| 6. | Etta: | [[<i>Sí esta lugar</i>]]. | (Substantive) |
| | | 'Yes that place' | |
| 7. | Ana: | [[Uh-huh]]. | (Regulatory/Interactional) |
| 8. | Etta: | .. <i>Yo paso por allí</i> , | (Substantive) |
| | | 'I go by there' | |
| 9. | | <i>pero</i> , | (Regulatory/Textual) |
| | | 'but' | |
| 10. | | .. (<i>H</i>) <i>nunca he en[trado este] lugar</i> . | (Substantive) |
| | | 'I've never gone inside that place' | |
| 11. | Ana: | [Oh =] | (Regulatory/Validational) |
| 12. | Etta: | So, | (Regulatory/Cognitive) |
| 13. | | I don't know, | (Regulatory/Cognitive) |
| 14. | | yeah they say it's pretty good. | (Substantive) |

Regulatory IUs, which frequently correspond to discourse markers and form a single Intonation Unit on their own, include lines 1, 4, 5, 7, 9, 11, 12, and 13. Regulatory IUs, however, do not all function in the same capacity. According to Chafe, IUs such as those in lines 1, 4, and 9 are *textual*, helping to regulate the development of the text; 5 and 7 are *interactional* units functioning as back channel devices; 11, 12, and 13 may be analyzed as *cognitive*, expressing something about the speaker's mental state/processes, or as *validational*, judging the validity of the information expressed. Although regulatory IUs can be separated into several types, all regulatory IUs function at a discourse-pragmatic and organizational level. Substantive IUs (examples 3, 6, 8, 10, 14) express something of informational substance, can have complex syntax, and tend to contain more words than regulatory IUs. Fragmentary IUs are truncated, unfinished utterances which can, theoretically, be the beginning of either a substantive or a regulatory IU, but are typically substantive in nature.

There is one other feature of the IU relevant to the present study. Intonation Units can finish with either nonfinal or final pitch contour. Nonfinal intonation contour is transcribed in my data with a comma and is realized by level intonation. Final intonation, transcribed with either a period or a question mark, is realized by a marked fall in intonation or a marked rise, respectively (Chafe, 1980, Du Bois et al. 1993, Sacks et al. 1974). I refer to IUs with nonfinal pitch contour as intonationally incomplete (or nonfinal intonation) and to IUs with final pitch contour as intonationally complete (or final intonation) interchangeably throughout the paper.

4 Results

4.1

The corpus

To the best of my knowledge, no studies have attempted to analyze codeswitching in direct relation to Intonation Units. This may very well be due to the variety of

transcription methods practiced by linguists. Not all transcription systems use IUs or their equivalent, for example the Conversation Analytic method of transcription. For my own work I have used the transcription methods developed by Du Bois, Schuetze-Coburn, Paolino, and Cumming (1993) wherein each line of transcription consists of one Intonation Unit. The prevalent pattern which emerged during the transcription process was one in which speakers overwhelmingly switched at Intonation Unit boundaries.

The speakers in my data range in age from 20 to 52 and are all competent bilinguals of Mexican descent living in Southern California. My corpus consists of one hour of conversational data, from four speakers involved in four different conversations, yielding a total of 782 analyzable IUs. Sixty-two one-word IUs such as backchannels of the type *uh-huh*, *oh*, and *ah*, other extralinguistic sounds, and some tokens of the negative word *no* were not analyzed as belonging to one language or another and do not make up part of the total IUs counted. Below are a few examples of specific IUs that were discounted.

- (6) Ana: Is he Mexican?
William?
- Etta: .. N[o=],
- Ana: [Oh].
- Etta: *William es*,
'William is'
.. *Colombiano*.
'Colombian'
- (7) Ana: .. (H) Some club called Over the Border?
.. or something?
- Etta: Yah=,
- Ana: [Where is it]?
- Etta: [*Ese que era Palomino =*],
'That's the one that used to be the Palamino'
- (8) Etta: So,
I don't know,
yeah they say it's pretty good.
.. *Porque no hay lugares para ir a [bailar] salsa*,
'Because there aren't any places to go salsa dancing'
- Ana: [No].
- Etta: *por ejemplo*,
'for example'
si quieres ir a bailar buena salsa o algo así,
'if you want to go out dancing good salsa or something like that'
.. *no hay lugares*.
'there isn't anywhere to go'
- Ana: Uh-huh.

It is difficult to know for certain in what language the words marked with arrows are uttered because they are phonologically and/or morphologically vague, ambiguous, or both. One could force an analysis whereby such types are assigned to a particular language, for example, to the language of the last IU produced by that speaker; however, not only would that procedure conflict with much of my other data, since speakers tend to switch at IU boundaries, it would also undermine the approach taken in this article, in which switching is handled in an emergent rather than a priori fashion. Furthermore, there is no compelling analytic advantage to be gained by such a method. Apart from the types of utterances described above, all talk was considered analyzable discourse and accounted for in the analysis.

4.2

The language of the Intonation Unit

I have categorized the IUs in Table 1 according to whether the speaker used Spanish, English or both. The largest category, comprising 58% of the data, is monolingual English IUs. Although all speakers are competent bilinguals, two self-identify as more proficient in English, while the other two self-identify as more proficient in Spanish. The speakers who self-identified as preferring Spanish dominated the conversational floor and produced almost twice as many IUs as the English dominant speakers. Logically, this would lead one to expect a higher overall number of Spanish IUs than English IUs; curiously, this is not the case. These counterintuitive totals may be the result of linguistic accommodation (e.g., Beebe & Giles, 1984; Giles, Taylor, & Bourhis, 1973), partial self-identification, or other sociolinguistic factors. The next largest category, comprising 38% of the data, is monolingual Spanish IUs. By far the smallest category, bilingual IUs, comprises a mere 4% of the data. What this means is that speakers are producing monolingual IUs 96% of the time, supporting my claim that the most robust boundary correlating with codeswitching is prosodic in nature.

Table 1

Intonation Units in the corpus, by language

<i>n</i>	<i>Spanish IU (%)</i>	<i>n</i>	<i>English IU (%)</i>	<i>n</i>	<i>Bilingual IU (%)</i>	<i>n</i>	<i>Total IU (%)</i>
296	(38%)	456	(58%)	30	(4%)	782	(100%)

4.3

The IU as a Cognitive Unit

It is not the case that codeswitching is entirely unrelated to syntax, but a functionalist approach demonstrates that syntactic structure is motivated by discourse and cognitive functions. It has long been observed that the clause represents a single proposition (Givón, 1983, 1984) and more recent observations demonstrate that a great number of clauses correlate to single Intonation Units. Chafe (1987, 1993, 1994) ascertains that the majority of substantive IUs are complete single clauses and suggests that the clause is, in essence, a verbal crystallization of an idea: “speakers aim at verbalizing a focus of consciousness in the format of a clause” (Chafe, 1994, p. 66). He claims the IU is a cognitive unit emergent in discourse that represents the limitation on the quantity of

information conversationalists can process, store, and access at any given time (see also Pawley & Snyder, 2000). For example, he observes the modal length for English substantive IUs to be four words and suggests that this is indicative of a “cognitive constraint on how much information can be fully active in the mind at one time” (1994, p. 69).

An example from my corpus illustrating this constraint, known as the “one new idea (per IU) constraint” (Chafe, 1994, p. 108), comes from a conversation about ‘Bo’, a nonpresent third party, and his apparent inability to do anything dance-like on the dance floor. On the first mention of Bo’s peculiar dancing style, Etta packages the information into two IUs, as can be seen in example (9a) lines (c–d). Then, roughly ten IUs later she sums up her story by mentioning Bo and his dancing again, but this time she packages the information into one IU, seen in example (9b) line (h). Because all the information has been established as given rather than new by the second mention, Etta and her interlocutor are able to process this longer-than-average IU.

- (9a) a. Etta: *El Bo,*
 ‘Bo’
 b. *resp --*
 ‘resp —’
 c. *se mueve mucho,*
 ‘he moves a lot’
 d. *pero no hace nada.*
 ‘but he doesn’t do anything’
- (9b) a. Etta: *Este,*
 ‘So’
 b. aha-ah,
 c. *si,*
 ‘yes’
 d. *tiene muy buen ritmo,*
 ‘he has very good rhythm’
 e. *así bien,*
 ‘good like this’
 f. *bien salsa no acá?*
 ‘he salsas well like that’
 g. *.. Pero le digo,*
 ‘But I told him’
 h. *Mijito te mueves mucho pero no haces nada.*
 ‘honey you move a lot but you don’t do anything.’

Others have also observed the relatively high frequency with which speakers produce clausal IUs and since have come to treat such substantive IUs as the basic unit of information storage and discourse processing in spoken language (e.g., Croft, 1995; Genetti & Slater, 2002; Matsumoto, 2000; Mithun, 1993, 1994; Park, 2002; Schuetze-Coburn, 1994).

It should come as no surprise then that clauses comprise the largest IU category-type in my bilingual corpus. Table 2 illustrates the discourse categories found in my data: 48% of total IUs are complete, single clauses, defined as any element consisting of a predication with or without its core arguments overtly expressed. IUs correlating with Chafe's regulatory category make up 19% of the data and consist of discourse markers and back channels, including reactive tokens, and lexicalized expressions such as *The way I see it*, *I don't know*, *Oh my goodness*, or *This is what I'm thinking*. Phrasal units, which include noun phrases, prepositional phrases, verb phrases and some adjective phrases, comprise 17% of the data, and truncated IUs, corresponding to Chafe's fragmentary category, make up 6% of the data. My final category, consisting of 10% of the data and labeled 'Other', is composed of quotative verb phrases, such as *le digo* and *I said*, which frequently make up their own IU, clauses spread across two or more IUs, and single content words.

Table 2

Syntax of the Intonation Unit

Clause	D. Marker	Phrasal Units	Truncation	Other	total
374 (48%)	152 (19%)	136 (17%)	45 (6%)	75 (10%)	782 (100%)

Example 10 illustrates various syntactic categories that may function as Intonation Units:

- | | | |
|------------|-----------------------------------|----------------------|
| (10) Etta: | She's so cute. | Clause |
| | Anyway he was there, | Clause |
| | and um, | Discourse Marker |
| | .. he's really nice. | Clause |
| | .. Really nice. | Adjective Phrase |
| | .. (H) <i>Y su hermano este</i> , | Noun Phrase |
| | 'And this brother of his' | |
| | ((pointing to a photo)). | |
| | .. he's the Mayor. | Clause |
| | ... (9) Of Nixon City. | Prepositional Phrase |
| Etta: | .. (H) yeah he gets girls, | Clause |
| | and people to =%, | Other |
| | .. publish their- | Truncation |
| | <i>no les cobran nada</i> . | Clause |
| | 'He doesn't change them anything' | |
| Etta: | And the group, | Noun Phrase |
| | ... (7) the thing is, | Expression |
| | it's only the four of us, | Clause |
| | nobody goes. | Clause |

4.4

Summary

Speakers produce language in prosodically packaged units. The syntactic composition of these units is quite flexible, although there are strong tendencies toward clauses, NPs, and discourse markers. However, it appears that not all substantive IUs are created equal in the world of codeswitching and that the type of IU that most frequently “hosts” the switch site has particular syntactic and prosodic characteristics, which I elaborate on in the subsequent sections. I demonstrate that speakers do not switch at any given Intonation Unit, but rather precisely at Intonation Units that can be thought of as intonationally and syntactically complete.

5 Completion points

Completion points were initially proposed by Sacks et al. (1974), whose model of turn-taking assumes that syntax provides units onto which interactants can reasonably project turn-completion and take the floor. These projectable units were interpreted and operationalized by Ford and Thompson (1996) as “syntactic completion points.”

... an utterance (is) syntactically complete if, in its discourse context, it could be interpreted as a complete clause, that is, with an overt or directly recoverable predicate, without considering intonation or interactional import. Syntactically complete utterances can always be extended through further additions, so points of syntactic completion may be incremental... we are not positing that an individual speaker's talk at a given location constitutes an independent grammatical unit in itself, but rather, by “syntactic completion,” we mean a point in the stream of talk “so far,” a potential terminal boundary for a recoverable “clause-so-far”. (1996, p. 143)

The notion of projectability — an interlocutor's ability to predict when a turn will end — is therefore crucial in any study of interactional turn-taking. Conversationalists rely on a set of inferential cues, both linguistic and extralinguistic, to interpret meaning while talking. They must also generate expectations about what is likely to ensue (Gumperz, 1982). Conversationalists must also be able to do this in bilingual discourse, which suggests that speakers are orienting to discourse structures above the level of the clause that consist of a bundle of features including prosody and syntax. After all, the occurrence of a complete single clause does not mean that the speaker has finished speaking, it does not always coincide with a syntactic completion point, and it is not always the most interactionally advantageous place to codeswitch.

An utterance is syntactically incomplete if there is a projected upcoming predicate, Ford & Thompson (1996, p. 154). Included in the category of syntactically complete utterances are elliptical clauses, answers to questions, and back-channels. Discourse markers and other pragmatic units, on the other hand, need to be categorized, according to completion, within the syntactic and discourse context in which they are uttered; therefore, I will provide contextualized examples throughout.

Examples (11) and (12) illustrate characteristics of syntactic and intonational completeness, and demonstrate a variety of structural disconnects between syntactic completion, final intonation contour, syntactic constituency, and pragmatic interpretation.

It will be shown that none of these four parameters map onto one another as directly as some researchers might hypothesize. (Examples of syntactic completion are indicated by slashes.)

- (11) a. Etta: Ah no,
 b. *ya ya*,
 ‘okay, okay’ (lit. already, already)
 c. *ahorita venemos hablando/ de eso*.
 ‘we were already talking about that’
 d. I had a a a-
 e. emergency meeting/ with,
 f. the only =
 g. employee/ that was here/ on the holiday/ weekend?/
 h. ... (*H*) *Este*,
 ‘It’s that’
 i. ... we’re going--
 j. *ah porque*,
 ‘ah because’
 k. we need a truck/.
 l. .. We definitely need a truck/.

In example (11) there is no syntactic completion point until part-way through the third IU (c), where there are two completion points, one after *hablando* and one after *de eso*. Truncated IUs such as that in line (d) are typically syntactically incomplete. There is a completion point in line (e), but it is in the middle of the IU rather than the end. There are four completion points in line (g), demonstrating the incremental way in which syntactic completion can be built up in an IU. There are then three IUs (h–j) before the next completion point in line (k), demonstrating that syntactic completion does not map onto the IU as directly as one might think.

In (12) below, line (a) is an example of an IU that has been coded as a single clause, but not as syntactically complete — grammatical subordination and phrasal markers of epistemicity (such as line a) are frequent places in the corpus where one finds this type of disparity. Another interesting aspect of this example is the absence of a syntactic completion point in Etta’s first turn (a–c). Lines (12b) and (c) have final intonation and are pragmatically complete, facts which can be discerned from Ana’s reactive token “Oh really.” However, both IUs are syntactically incomplete due to the projectability of the ensuing main predicate. It appears, however, that Ana is able to infer the content of Etta’s turn (i.e., what happened to the office) before the explicit mention of the verb in the following IU. This demonstrates that syntactic completion is not necessary for comprehension, nor is it necessary for pragmatic completion or use of a final intonation contour.

- (12) a. Etta: But it looks like on the survey,
 b. .. his office = . ((Whispered))

- c. last week.
- d. Ana: [Oh really/].
- e. Etta: [They raided his] office/.

The previous examples demonstrate a common structural disjunction among syntactic completion, final intonation contour, syntactic constituency, and pragmatic interpretation. Now let us turn to what happens among these different components in Switch-Boundary IUs.

6 The Switch-Boundary IU

As I have shown, speakers switch at IU boundaries 96% of the time. By focusing on what I call the *Switch-Boundary IU* (SBIU)—the Intonation Unit directly preceding another Intonation Unit that is uttered in the other participating language—I now show that it is possible to isolate the interactional and structural features characteristic of a codeswitching frame. In other words, specific prosodic and syntactic features characterize the IU that directly precedes a switch in language. The following examples will serve to illustrate and define Switch-Boundary IU:

- (13) a. Neti: They're really doing the right thing/,
 → b. and they're giving up a lot/.
 c. Etta: ... (.7) Uh-huh.
 → d. Neti: .. *Porque el es muy sercano a su familial*.
 'Because he is very close to his family'
 e. And you know,
 f. he's a twin/.
 g. Etta: ... (.7) Hm = .

In example (13) both IUs marked by arrows are SBIUs. The example begins with two English IUs uttered by Neti and a back channel in line (c) uttered by Etta. According to my definition, the only intervening material that can occur between a SBIU and the IU spoken in the other participating language is a back channel. Line (b) is a SBIU because in Neti's following utterance, line (d), she switches to Spanish and the only intervening material is a back channel. Line (d) is a clear example of a SBIU.

For the purposes of analyzing the relationship between codeswitching and a specific boundary type, I have constrained what I regard as a Switch-Boundary IU. For example, the IU in line (14d), marked with an asterisk, cannot be considered a SBIU because there are three short intervening IUs before the following switch into English in line (h). Example (14) begins with four Spanish IUs uttered by Etta (a–d), then Ana gives a minimal response in line (e), which if that were all that was uttered and then a switch in language took place, (d) would count as an SBIU. However, even though the next IU of any lexical substance uttered by Etta constitutes a switch in language, there is too much intervening material between the actual switching. Ana's question in line (g) more than anything else prohibits me from counting line (d) as an SBIU. Now line (h) is a good, clean example of an SBIU.

- (14) a. Etta: ... (.7) *Oh ya los conocel*,
 ‘Oh you know them’
 b. *allí andabal*,
 ‘she came’
 c. *este = Daniela*.
 ‘that Daniela’
 * d. ... (.8) *La traían amagadal*.
 ‘They had her on a short leash’ (lit. They brought her threatened)
 e. Ana: .. Oh yeah?
 f. Etta: Oh = [oh =].
 g. Ana: [She behave]/?
 → h. Etta: Oh = my goodness.
 i. *así llegó!*. ((makes a facial gesture))
 ‘she arrived like this’

6.1

The Switch-Boundary IU and Completion Points

I coded each SBIU for syntactic completion and for whether the IU had final or nonfinal intonation, a practice that follows Ford and Thompson (1996). In that study Ford and Thompson include final intonation contour within their definition of pragmatic completion. That is to say, to be pragmatically complete an utterance must also have final intonation contour. However, final intonation does not always imply pragmatic completion, so this correspondence operates in only one direction. Although I did not systematically code for pragmatic completion, the notion of pragmatic completion plays a peripheral role in my analysis.

- (15) a. Etta: I don’t know/,
 → b. yeah they say it’s pretty good/.
 c. .. *Porque no hay lugares/ para ir a [bailar/] Salsal*,
 ‘Because there aren’t any places to go Salsa dancing’
 d. Ana: [No].
 e. Etta: *por ejemplo*,
 ‘for example’
 f. *si quieres ir a bailar buena salsa*,
 ‘if you want to go and dance good salsa’
 g. *o algo así*,
 ‘or something like that’
 → h. .. *no hay lugares!*.
 ‘there’s nowhere to go’
 i. Ana: Uh-huh.
 j. Etta: *wh- where do you dance?*

Example (15) begins with a syntactically complete but intonationally nonfinal English discourse marker. The next IU, also uttered in English, has final intonation and a syntactic completion point, making it an interactionally and cognitively effective place to codeswitch. The speaker switches into Spanish for the next five IUs, all of which lack final intonation but have various syntactic completion points. Finally the speaker switches into English following an SBIU that both has a final intonation contour and is syntactically complete. This concurrence of syntactic completion and final intonation at a SBIU is a pattern seen throughout the data (see Fig. 1).

Figure 1

SBIU Completion Points

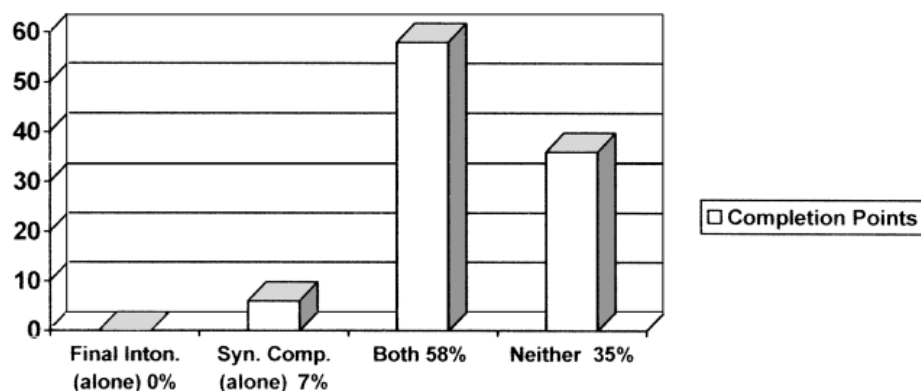


Figure 1 illustrates the number of SBIUs that have final intonation only, syntactic completion only, have final intonation contour and syntactic completion, or neither. There are no SBIUs that have final intonation contour alone, which means that in these data all SBIUs with final intonation are also syntactically complete. However, there are other IUs, namely non-SBIUs, that have final intonation contour but are syntactically incomplete (illustrated by lines b and c in example (12), and repeated here for convenience as (16)).

- (16) a. Etta: But it looks like on the survey,
 b. .. his office = . ((Whispered))
 c. last week.
 d. Ana: [Oh really/].
 e. Etta: [They raided his] office/.

The figure also shows a small percentage of SBIUs (6%) that are only syntactically complete (i.e., do not also have final intonation). I now turn to these and to four other categories of SBIUs that apparently diverge from the pattern I have identified above.

6.2

The shaping of discourse

The patterns that have emerged from the data and have been discussed so far are structural in nature: (1) speakers switch at IU boundaries 96% of the time, shown in Table 1, (2) speakers switch at IU boundaries that are syntactically complete 65% of the time (the categories ‘Both’ plus ‘Syntactically Complete’ combined: Fig. 1), (3) speakers switch at IU boundaries that have a final intonation contour and a syntactic completion Point 58% of the time (Fig. 1), and (4) all switch boundaries that have final intonation are also syntactically complete. Clearly some important structural categories are shaping the discourse, and prosody plays an integral role in that shaping. I now turn to the discourse-functional categories, shown in Table 3, that appear to depart from these strong structural norms, and demonstrate that these apparent structural anomalies play interactional roles in the development and maintenance of the discourse.

I have calculated the percentage of SBIUs that are syntactically and intonationally complete (corresponding to the ‘Both’ category in Fig. 1), and those that are only syntactically complete (corresponding to the ‘Syntactically Complete’ category), and I have grouped those that are “Neither” into four discourse-functional categories: regulatory, quotative, repair/redo, and formulaic. Tables 3 and 4 provide the breakdown of the data.

Table 3

Completion Points

	<i>n</i>	(%)
Syntax/Intonation	72	(58%)
Syntax Only	8	(7%)
Total	80	(65%)

Table 4

Discourse-Functional Categories

<i>Regulatory</i>	<i>Quotative</i>	<i>Repair/Redo</i>	<i>Formulaics</i>	<i>Total</i>
24 (19%)	7 (6%)	7 (5%)	6 (5%)	44 (35%)

The largest discourse-functional category from Table 4 is regulatory IUs, typically discourse markers. A large body of codeswitching literature treats the phenomenon of discourse markers uttered in the other participating language (e.g., Behtahila & Davies, 1995; Brody, 1987; Maschler, 1994, 1997, 1998; Myers-Scotton, 1993a; Sankoff, Thibault, Nagy, Blondeau, Fonollosa, & Gagnon, 1997); however, this is not the phenomenon under scrutiny here. I am focusing on the IU that occurs directly before the alternation in language (i.e., the SBIU), not the actual switched IU. Regulatory IUs have interactional and cognitive functions in the development and maintenance of discourse.

Schiffrin gives an intentionally vague definition of discourse markers as “sequentially dependent elements which bracket units of talk” (1987, p. 31). She relates discourse markers not to one traditional linguistic unit of analysis alone — such as a syntactic unit, a proposition, a speech act, or a tone unit — but rather to all of these at once. Discourse markers have broad scope and are used to guide conversationalists in making appropriate meaning inferences by aiding in the construction of contextualized interpretations. In this way, they function quite differently from substantive IUs, whose function it is to generate contentful lexical material. It is no surprise then that these two types also differ formally.

- (17) a. Neti: He’s a twin of a-
 b. of a a% = ,
 → c. you know/,
 d. *eran hombre y mujer!*
 ‘they were male and female’
 e. twin/.

The discourse marker in example (17c) functions cognitively by giving the speaker time to formulate her next IU and continue the word-search begun in the preceding IU. It also functions interactionally engaging her interlocutor in the word-search with her. Clearly, it does not serve to supply the discourse with substantive information.

The next largest category is quotatives. Quotatives frequently occur alone in a single IU, with the quoted speech either directly preceding or following.

- (18) a. Etta: ... (.8) < VOX Oh my God ^no,
 b. but I would love to learn it/ VOX > ,
 → c. *dice*,
 ‘she says’
 d. < VOX bring some music/ so we can practice/ here/ VOX > ,
 → e. *le dijo*,
 ‘she told him’
 f. < QUOT ah no ^way = / QUOT > ,
 → g. *le digo que nol*,
 ‘I say to her’
 h. < QUOT that’s too tiring/ QUOT > .

The quotative IUs (c), (e), and (g) in example (18) are uttered in Spanish, while the actual quotations are uttered in English, making every IU in this example an SBIU. The small percentage of SBIUs that are syntactically complete but intonationally nonfinal is found within quotative turns such as this. These can be seen in lines (b), (d), and (f). Quotatives, like regulatory IUs, can be thought of as on the periphery of information, or content production.

The next category of syntactically and interactionally incomplete IUs is repair/redo, examples of which can be seen in (19), lines (b), (d), and (e). The syntactic and interactional interface and organization of repair has been a concern of language analysts

for a number of years (Du Bois, 1974; Hockett, 1967; Jefferson, 1974; Schegloff, 1979). Frequently, “repaired segments” (Fox & Jaspersen, 1995, p.81) occupy one IU and correspond to Chafe’s ‘fragmentary’ IU type, which have truncated intonation, and therefore cannot have a final intonation. Syntactic incompleteness with these types can be accounted for by means of the notion of projectability. For example, line (d) could be syntactically complete within some other discourse context, say as an answer to a question; however, within the present discourse context it is clearly syntactically incomplete.

- 19) a. Neti: But we been doing ^good =/,
 → b. we been doing-
 c. *Lo que pasa es no practicamos pues/*
 ‘It’s because we don’t practice you know’
 → d. .. we don’t--
 → e. .. *no más las--*
 ‘only the-’
 f. .. the private and the group/ if =,
 g. that’s it/.
 h. .. [We don’t practice/] nothing =/ so =%/.

The final category, ‘formulaic’, consists of repeated segments that are not repairs (20), what have been termed “left-dislocations” (21), and items in a list (22), all of which occur in their own IU and have particular (formulaic) grammatical features that index discourse-pragmatic functions.

(20)

- a. Etta: ... (4.2) *Ellos*,
 ‘They’
 b. they were going up north,
 c. and Pepe was going this way.

- (21) a. Etta: Anyway he was there/,
 b. and um,
 c. .. he’s really nice/.
 d. .. Really nice/.
 → e. .. *Y su hermano este*, ((*pointing to photo*))
 ‘And this brother of his’
 f. .. he’s the Mayor/.

- (22) a. Ana: *Tienes dos tomates/*,
 ‘You have two tomatoes’
 → b. *un pepino*,
 ‘one cucumber’
 c. and like,
 d. .. lettuce/.

Although the above four categories differ widely in their actual use and function, they all have the common characteristic of operating at a discourse-pragmatic level and conveying minimal substantive content. It is arguable that the IU types categorized as formulaic (examples 20–22) convey as little substantive content as a discourse marker; however, unlike discourse markers, repetition, dislocations, and lists all have formulaic grammar (and frequently prosody, e.g., Sánchez-Ayala, 2003), which results in a prepackaged unit that tends to be easily processed by the listener. At any rate, discourse markers, quotatives, repairs, and formulaic expressions differ functionally and formally from the substantive SBIUs, which have been demonstrated to have syntactic completion points and final intonation contour.

The four discourse-pragmatic categories can be thought of as peppering the conversation with speaker intentions and means of interpretation that are based on shared sociocultural and cognitive factors (i.e., shared knowledge and experience). These types of pragmatic SBIUs differ both structurally and interactionally from the SBIUs discussed previously, which were demonstrated to contain completion points and augment the conversation with substantive, lexical content. Such differences are illuminated when prosody and syntax are accounted for in the analysis.

7 Conclusion

In this article, I have provided a structural analysis of the intonational and syntactic features in the Switch-Boundary IU, and have suggested that for a more complete understanding of the switch site in bilingual discourse one cannot rely on syntax alone. Moreover, I have shown that utilizing the IU as the unit of analysis leads us to prefer an incremental syntactic analysis to traditional syntactic constituency. This is, in part, due to the notion of projectability. I have also illustrated that SBIUs can be substantive, regulatory, or fragmentary in form, and as a consequence they may function with different discourse objectives (i.e., adding contentful material or discourse-pragmatic meaning).

Several important patterns emerged from my analysis: (1) speakers overwhelmingly switch at IU boundaries (96%), (2) speakers switch at IU boundaries that are syntactically complete a majority of the time (65%), (3) speakers switch at IU boundaries that have final intonation a slight majority of the time (58%), and (4) most of the syntactically complete SBIUs also have final intonation contour (84%). I have also suggested that when speakers depart from these structural norms, they do so for discourse-pragmatic reasons.

These patterns urge us to look closely at the important role prosody plays in conversational data, including bilingual conversational data. More generally, the findings of this study demonstrate the necessity of a discourse-functionalist approach to codeswitching in order to provide a fuller account of codeswitching structure than is possible through a syntactic account alone.

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Appendix

Transcription Conventions

.	Final Intonation
,	Continuing Intonation
—	Truncated Intonation
-	Truncated Word
=	Elongated Segment
^	Word Level Contour Tone
[]	Speech Overlap
/	Syntactic Completion
...(n)	Long Pause (.6 or more)
...	Medium Pause (.3–.5)
..	Short Pause (.2–.3)
(H)	Inhalation
(Hx)	Exhalation
%	Creaky Voice
@	Laughter
(())	Researcher's Comment
X	Indecipherable Syllable
<VOX>	Speech of Another
<QUOT>	Self Quotation

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