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## CHAPTER 18

## Typological constraints on code mixing in Inuktitut–English bilingual adults

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Patterns of code mixing vary according to relative typology of the languages and sociolinguistics of the contact situation (e.g., Muysken 2000). We extend understanding of the factors involved by analyzing for the first time mixing between an isolating Germanic language (English) and a polysynthetic Eskimo–Aleut language (Inuktitut). The adult bilinguals mixed English and Inuktitut in about 5% of the almost 17,000 utterances analyzed. Over half of the mixes comprised a single noun or verb root from one language (usually English) in an utterance of the other. Another third were tags or quotes from one language in an utterance of the other. Very few mixes involved phrases from each language as is common with typologically similar languages (e.g., Spanish–English, Poplack 1980).

**Keywords:** bilingual, code mixing, code switching, Inuktitut, English, language typology, Canadian Inuit, morphology, syntax

### 1. Introduction

Bilingual speakers not uncommonly use both of their languages within one utterance—a phenomenon referred to as code mixing (also called code switching). The extent to which this occurs is dependent in part on community norms and the social identity associated with code mixing. Some communities of bilinguals such as New York Puerto Ricans tend to code-mix frequently (e.g., Poplack 1980) while others typically code-mix much more rarely. Regardless of the frequency of occurrence, both laypeople and researchers have historically interpreted code mixing as a sign of confusion on the part of the speaker or of random use of two languages (e.g., Volterra & Taeschner 1978, Redlinger & Park 1980). However, linguistic research over nearly the past thirty years has shown clearly that code mixing is linguistically constrained. Many different constraints have been proposed to explain adult code mixing, based on analyses of both surface word order and deeper grammatical structure. These include Poplack's (1980) Equivalence Constraint and Free Morpheme Constraint; Di Sciullo, Muysken & Singler (1986) Government Constraint; Myers-Scotton's (1993) Matrix Language Frar-

The second reason to study code mixing in Eskimo-Aleut languages is related to the current sociolinguistic situation of Inuit in northern Canada. Inuktitut is one of the few remaining North American aboriginal languages which is learned as a mother tongue: approximately 73% of Inuit children have Inuktitut as their first language, and 80% can converse in it (Statistics Canada 2003). Although only about 2% of Inuit in northern Canada learn both Inuktitut and a second language (usually English) bilingually from birth (Statistics Canada 2001), virtually all Inuit become bilingual in either English or French as a result of schooling and community exposure (Dorais & Sammons 2002, Taylor & Wright 1990). There is substantial concern that Inuktitut will eventually stagnate or be lost to English and French, as has happened in many other similar situations where aboriginal and majority languages are in contact (Allen 2007). Code mixing is seen by many as an early sign of this potential language shift (Baker 1996:234), even though code mixing is very typical in healthy bilingual communities (Eastman 1992). Research documenting the typical patterns of code mixing in Inuktitut-English bilinguals can help to distinguish healthy mixing patterns from patterns indicative of potential language shift.

In this chapter, we attempt to fill this gap in the literature by characterizing the code mixing in adult Inuktitut-English bilinguals and analyzing it in the light of the patterns of code mixing elucidated by Muysken (2000). We first lay out Muysken's patterns in some detail, discussing which of them are predicted, based on the linguistic characteristics of Inuktitut and English. We then show how these predictions are met in data collected from adult Inuktitut-English bilinguals living in northern Canada. The code mixing of these bilinguals is highly constrained linguistically in ways consistent with expectations from the typologies of the languages involved. To foreshadow the results, insertion mixing as well as a constrained form of alternation mixing are very common, while congruent lexicalization does not occur. The paper concludes with a discussion of unanswered questions and directions for further research.

## 2. Background

### 2.1. Code mixing

In this chapter, we define code mixing as the use of elements from two or more languages within one utterance. Although these elements can be phonological, lexical, morphological, syntactic, semantic, or pragmatic, we restrict ourselves here to lexical and morphosyntactic mixing. As already noted, code mixing can take many forms. Examples (1-3) illustrate the patterns that Muysken (2000) refers to as insertion (1), alternation (2), and congruent lexicalization (3). Throughout, or

Model; MacSwan's (1999) PF Disjunction Theorem; and Myers-Scotton & Jake's (2000) 4-M Model. Although the constraints have several commonalities, their predictions also conflict with one another in important ways, and no current theory explains all of the instances or patterns of code mixing found in the data.

Muysken (2000), in a review and analysis of the code-mixing literature, suggests that apparent conflicts among the various constraints are largely resolved if one assumes that code mixing is not a unitary phenomenon, but rather that fundamentally different types of code mixing exist depending on the relative typological characteristics of the languages involved. He proposes that the different code-mixing types can be accounted for within three main patterns — insertion (element from Language A inserted into utterance of Language B), alternation (phrases in Language A alternating with phrases in Language B), and congruent lexicalization (words from each of Languages A and B used more or less randomly in the utterance). He further proposes that the different code-mixing patterns correspond to different levels of activation of the two languages involved.

Information on code mixing in a wide variety of language pairs is essential to support this position thoroughly & Muysken (2000) presents much relevant information in his overview and analysis of the literature. However, virtually no information is available in the literature about code mixing involving Eskimo-Aleut languages; only one preliminary study of code mixing in English-Inuktitut bilinguals is available (Allen, Genesee, Fish & Crago 2002). This is an unfortunate gap in the literature for two reasons. First, relatively few studies have been reported of code mixing involving a polysynthetic language with agglutinative morphology like Inuktitut. Further, the existing studies reveal that the particular characteristics of the agglutinative morphology and the way it interacts with the morphology of the other language play a significant part in what types of mixing are typical. For example, Muysken (2000:55) notes the very different borrowing patterns between Spanish-Quechua and French-Cree, even though the typological differences between the language pairs are very similar (i.e., Spanish and French are both Romance languages with relatively simple morphology, while Quechua and Cree are both polysynthetic with agglutinative morphology). In particular, Spanish verbs are commonly borrowed into the polysynthetic language Quechua because the very regular verbal morphology of Quechua facilitates this. However, French verbs are rarely integrated into the polysynthetic language Cree in the formation of the mixed language Michif because the very complicated verbal morphology of Cree inhibits this. More studies of mixing involving other polysynthetic and agglutinative languages would be a useful addition to the literature, showing to what extent the currently documented patterns are transferable and to what extent they are modified by slight differences in linguistic structure.

language will be represented in normal typeface and the other in italics, both in the original utterance and in the translation.

- (1) Mommy, I'm in *Gefjangnis*.  
'Mommy, I'm in *prison*.' (German-English, Allen field notes, Marion 4:6)
- (2) Nadine est née au mois d'avril en *dan* in *de maand oktober heb ik een winkel opengedaan*...  
'Nadine was born in April *and then* in *October I opened a shop* ...'  
(French-Dutch, Treffers-Daller 1994:30)
- (3) Bueno, in *other words*, el *flight* que sale de Chicago *around* 3...  
'So, in *other words*, the *flight* that leaves from Chicago *around* 3 ...' (English-Spanish, Pfaff 1976:250)

Muysken (2000:30) proposes that code mixing is in fact syntactically prohibited since it generates conflict in the language system. For code mixing to be licensed, this conflict must be neutralized in some manner to allow for the two languages to be mixed intrasententially. In *insertion* mixing, where one word or element from Language A is mixed into Language B, Muysken claims that the mixed element is categorially equivalent in the two languages. He proposes that the mixed element "has the same status in the two languages, is morphologically encapsulated, shielded off by a functional element from the matrix language, or could belong to either language" (Muysken 2000:31). Essentially, the mixed element masquerades as an element in the base language, so it creates no conflict in the system because the system does not see it as an "intruder". The result is that only one language system is activated.

In *alternation* mixing, a phrase or phrases in Language A alternate(s) with a phrase or phrases in Language B. Here Muysken suggests that no tight relationship (e.g. government) holds between the elements in the two languages. Each phrase must be fully grammatical and complete in its own language, and the "switch point" between phrases must be allowed in both languages. One language system is operative for the part of the utterance in that language, and the phrase must fulfill all the grammatical requirements for such a phrase in that language. Then the other system becomes operative for the part of the utterance in the other language, and again the phrase in that language must fulfill all the grammatical requirements for such a phrase. Because each phrase or utterance portion functions independently, no conflict between the two systems is detected.

In *congruent lexicalization*, where words from each of Languages A and B are used more or less randomly in the utterance, the grammatical structure of the utterance is the same in the two languages, so no structural constraints are violated by the code mixing.

A speaker's preference for one or another of the three mechanisms just described for neutralizing the syntactic conflict imposed by code mixing depends on the characteristics of the language pair involved in the code mix, and is probabilistic rather than absolute. Muysken discusses several relevant characteristics: relative linguistic typology, geographic and contact setting, relative language dominance and prestige, sociolinguistic situation, interactional setting, age group of speakers, generation of speakers since family or community onset of bilingualism duration of contact, and relative proficiency of the speaker in the two languages. In his review of the existing code-mixing literature, Muysken finds that *insertion* mixing tends to predominate when the two languages have very different structural typologies and when at least one of the languages is agglutinative. Further insertion mixing is common in colonial settings, in recent migrant communities in situations of intense contact, in situations where the speaker manifests a considerable proficiency difference between the two languages, and in situations where there is not a strong attitudinal barrier to mixing. *Alternation* mixing, in contrast tends to be more frequent when the languages involved have similar structural typologies and surface orders, as well as in stable bilingual communities with a tradition of language separation, in second generation migrant communities, and in speakers who have a similar level of proficiency in the two languages. Finally *congruent lexicalization* is typical in situations similar to that of alternation mixing except that this pattern emerges when there are no strong attitudinal barriers against mixing (in contrast with a tradition of language separation). Additionally congruent lexicalization surfaces when the two languages in question are a dialect and a standard form of the same language or part of a postcreole continuum, where the languages are closely related and have equal prestige, and in situations of intense contact.

Given the framework of code mixing that Muysken delineates, what pattern would we expect for code mixing in Inuktitut-English bilinguals? In the next section, we describe the contact and linguistic characteristics of these two languages in preparation for answering this question.

## 2.2. Inuktitut and English in contact

Inuktitut is an Eskimo-Aleut language spoken in northeastern Canada. Eskimo-Aleut languages are spoken by some 137,000 Inuit in Siberia, Alaska, northern Canada, and Greenland (Dorais 1992). About 29,000 of these speakers are in Canada, the majority in Nunavut (the Inuit territory created in 1999) and Nunavut (the northern region of Quebec) (Statistics Canada 2001). Only a small percentage of these — some 2% — identify themselves as simultaneously bilingual in that the

learned both Inuktitut and another language at home from birth (Statistics Canada 2001). They may have been raised in families with two bilingual Inuit parents or in families with one Inuktitut-speaking parent (typically the mother) and one English- or French-speaking parent.

Virtually all other Inuit in Nunavik and Nunavut learn Inuktitut at home from birth and become bilingual in either English or French (or both) through schooling and community exposure (Dorais 1992, Dorais & Sammons 2002). In most communities, school instruction takes place in Inuktitut until the end of grade 2 and then is largely in either English or French depending on parental choice. Some communities offer Inuktitut instruction for one or two additional grades depending on the availability of qualified teachers, and some offer Inuktitut units in content courses in later grades. In the largest communities, English-only and French-only streams are available from kindergarten on.

English is commonly heard in Inuit communities throughout northern Canada, and is the *lingua franca* among Inuit, anglophones and francophones even though anglophones constitute only 5% (in small settlements, typically 150 to 1000 inhabitants) to 35% (in large settlements, typically over 1000 inhabitants) of the population. It is used frequently in work situations, especially when one or more employees or customers do not speak Inuktitut. Inuktitut is typically used at home and in social situations, as well as in more traditional occupations such as hunting and fishing. The average home has at least two television sets and watches TV about 3.25 hours per day; only about half an hour of programming in Inuktitut is available each day, so the majority of television exposure is in English or French (Taylor & Wright 1990).

### 2.3. Linguistic characteristics of Inuktitut and English

English and Inuktitut differ typologically in many ways. English basic word order is SVO, while Inuktitut is predominantly SOV. Word order in both languages can vary depending on the discourse and pragmatic situation, but this occurs much more freely in Inuktitut than in English. Further, subjects and objects of sentences are omitted frequently in Inuktitut — up to 85% of instances in spontaneous speech (Allen & Schroeder 2003) — while omission of subjects and objects is relatively rare in English and constrained to particular grammatical contexts (e.g., subjects of subordinate clauses which corefer with matrix subjects, so-called “di-ary drop”). Word order also differs within noun phrases and adpositional phrases: the noun typically precedes the modifier or adposition in Inuktitut, but follows the modifier or adposition in English. Morphological structure is another crosslinguistic difference. English is typically referred to as having “isolating” morphology because its repertoire of inflectional or derivational morphemes is relatively small.

Inuktitut, on the other hand, is agglutinating and polysynthetic with over 1000 verbal and nominal inflectional morphemes and over 400 derivational morphemes. A typical word in Inuktitut comprises at least two morphemes and is often as many as 10 morphemes long. These differences are illustrated in the utterance in (4).

- (4) Ø siturautii-kkani ai -tsi -si -gama.<sup>1</sup>  
 Ø sled -MOD.1SPL get-ANTIP-PRS-CTG.1SS  
 ‘I will get my sled.’ (Elijah 2:9)

In the Inuktitut utterance, the object precedes the verb, the modifier (personal pronoun *-kkani* ‘my’) follows the noun, the subject is omitted, and there is an average of three morphemes per word. In the equivalent English utterance, in contrast, the object follows the verb, the modifier precedes the noun, both subject and object are expressed overtly, and there is an average of one morpheme per word.

### 2.4. Type of mixing expected

A look at the typological and sociolinguistic features of the English–Inuktitut pair provides insight into what mixing patterns would be expected under Muysken’s (2000) analysis. Typologically, the two languages have very different structure: they share few surface word orders, and one of them (Inuktitut) is agglutinative. All of these features point to insertional mixing. On the sociolinguistic side, insertional mixing is also indicated by the following considerations: the contact setting is of the colonial type; there is usually a proficiency difference between the two languages (most speakers are more proficient in Inuktitut); there is historically a prestige difference between the two languages (English is usually considered more prestigious than Inuktitut although this is starting to become less salient following the formation of the Inuit territory Nunavut in 1999); there is increasingly intense contact between the two languages; and there are no strong attitudinal barriers against mixing. Some alternational mixing would be predicted by the prestige difference, and perhaps some congruent lexicalization by the intense contact and lack of attitudinal barriers against mixing. These facts taken together, then, predict predominantly insertional mixing with a small amount of the other two types of mixing on occasion. To assess the validity of Muysken’s (2000) code-mixing framework for code mixing involving Eskimo–Aleut languages, we examined the predictions just laid out in a set of spontaneous speech data collected from ten Inuktitut–English bilingual adults living in Nunavut and Nunavik.

1. All utterances are written as uttered by the speaker rather than using standard spelling conventions. This is especially reflected in final consonants which are often omitted in spoken Inuktitut, or final vowels which are often lengthened, especially in questions.

### 3. Method

#### 3.1. Participants

In order to examine patterns of code mixing in Inuktitut-English bilinguals, we collected spontaneous speech data in naturalistic communication situations in the homes of five bilingual families with two bilingual (Inuktitut-English) parents of Inuit heritage. All families lived in one of two relatively large Inuit settlements (1000 to 3000 inhabitants) in northern Canada in which about 25% of the population did not speak Inuktitut. Each family had at least one child aged between one year and eight months (1;8) and two years and eleven months (2;11) at the beginning of the study, and several of the families had other children as well. All of the families had spoken both English and Inuktitut in the home at least since the birth of the target child. Although the overall study looked at both adult and child language, the focus of the present chapter is the code-mixing patterns of the adult caregivers.

#### 3.2. Data collection

Parents and children were videotaped interacting with one another four to six times over the period of a year, with each taping session lasting between one and two hours. All sessions occurred in the homes of the families, and participants were encouraged to interact as they normally would in daily life. No attempt was made to guide the topics of discussion or language used. Some sessions were taped by the families themselves, but most were taped with a small hand-held videocamera by researchers (some non-Inuit, some Inuit) who sat unobtrusively in a corner of the room where the participants were talking and playing. Inuit are used to many people being present in the home and to learning by observation rather than explicit teaching, so this observation and taping situation was not seen as unusual. The technology was also not unusual: many Inuit families have their own videocameras, and all are familiar with videotaping from local Inuit television.

#### 3.3. Data transcription and coding

All utterances spoken by or to the target child were transcribed on computer by native speakers of Inuktitut fluent in English, and then reviewed by native speakers of English. Data were transcribed in CHAT format following the procedures outlined in the CHILDES manual (MacWhinney 2000). All spontaneous utterances were transcribed, as well as all repetitions and imitations of previous utterances. All utterances were coded for the language used: English only, Inuktitut only, or

mixed. Any utterances which were unclear or ambiguous were excluded from coding and further analysis. For instance, an utterance solely comprised of the word *huh* could be in either language. Interactional markers such as *oh*, *aih*, *whoa*, *wo* and *whooh* were also seen as appropriate for either language. English words which have been borrowed into Inuktitut were nonetheless treated here as English rather than Inuktitut; these included *tea*, *dance*, *TV*, *hockey*, *Honda*, and *skidoo*.

Mixed utterances were then further coded for the patterns of code mixing. The first level of coding focused on the type of code mixing according to the framework of Muysken (2000): insertion, alternation, congruent lexicalization, both insertion and alternation within one utterance, and not classifiable. Distinctive patterns within each mixing type were also distinguished as follows. *Insertions* were coded for the type of element inserted: verb, noun, adjective, adverb, or conjunction. *Noun insertions* were further coded for form: noun alone, modified or compound noun, noun phrase, or the plural form of any of these. In addition, they were coded for the type of construction that the mix appeared in, including case-marked subject or object, noncase-marked subject or object, object of adpositional possessor, possessum, part of adjectival phrase, part of noun incorporation structure, affixed with question or conjunction marker, and part of copular construction. *Verb insertions* were also further coded for form: verb, noun used as verb, modified or compound noun used as verb, and plural noun used as verb. *Alternations* were coded for the type of element in each language: tag, quote, verb phrase, noun phrase, adverbial phrase, and translation equivalent.

Note that a number of utterances could be analyzed as either insertions or alternations since the criteria for the two overlap in certain cases. We present all of these instances as insertions in the results section, but note all the utterances in groups of utterances that could just as easily be considered alternations. These are also indicated in the relevant tables.

The base or matrix language for insertion mixes was taken to be the language of the majority of morphemes in the utterance, which was also the language that fit the word order and/or grammatical structure of the utterance and the language which contributed all or most of the grammatical morphemes. Note, however, that almost 20% of the insertion mixes included only one morpheme from each language. This phenomenon is not discussed in the literature on code mixing, presumably because most researchers work with adult-directed speech in which short utterances are not common. In child-directed speech (and child speech), however, short utterances are fairly common and many of them are code mixed. We determined the base language for these utterances following two of the criteria used for longer utterances: the language whose word order is followed, and the language which contributes the grammatical morpheme (if there is one). Because these two-morpheme utterances do not clearly exemplify insertion in the same

way as longer utterances, we have provided numbers and examples separately for these two types of utterances in the results section.

#### 4. Results

Table 1 shows the proportion of use of each language for the adults in each family (parents as well as other adults). The rate of use of Inuktitut as compared to English differs across the five families, but the proportion of use of each language is above 20% in all but one family (AW). The families also differ in whether they predominantly use English (SR) or Inuktitut (AW, SA) or a fairly balanced combination of the two languages (PN, AI). Rates of mixing across the families range from 2.1% to 8%.

The types of mixes found in the data are shown in Table 2. As predicted, the majority of the mixes (62%) are insertions, mostly insertion of an English noun or noun phrase into Inuktitut (58% of all insertions). Alternations account for a further 37% of the mixes, of which 5% contain both alternation and insertion mixing. Only 2% of the utterances are not classifiable within Muysken's framework. These are ungrammatical by the standards of both languages, and may represent either performance errors or attempts to simplify language to facilitate comprehension by the child. Each of these patterns is discussed in detail in the following sections.

Table 1. Language used in utterances spoken by bilingual adults

Family	No. utterances	% English	% Inuktitut	% mixed
AW	4,726	13.3	84.6	2.1
SR	2,363	72.7	23.6	3.7
SA	3,452	20.9	72.4	6.7
PN	2,143	50.9	41.5	7.6
AI	3,990	39.7	52.3	8.0
TOTAL	16,674	34.4	60.2	5.4

Table 2. Mixing types in data from bilingual adults

Mixing type	No. Mixed utterances	% Total mixed utterances
Insertion	432 <sup>a</sup>	61.8
Alternation	256 <sup>b</sup>	36.6
Congruent lexicalization	0	0.0
Not grammatical	11	1.6
TOTAL	699	100.0

<sup>a</sup> 31 of these utterances could also be analyzed as alternations.

<sup>b</sup> 13 of these utterances contain both alternation and insertion mixing.

#### 4.1. Insertion mixes

As noted earlier, insertions are words or phrases that are "morphologically encapsulated" (Muysken 2000: 31) and masquerade as elements in the base language. The activation of the inserted element in the language is "temporarily diminished" (Muysken 2000: 8). In the English-Inuktitut data, we find nominal, verbal, adverbial, adjectival, and conjunction insertions, as listed in Table 3. Note that Table 3 separately indicates insertions in utterances with only one morpheme in each lan

Table 3. Insertion mixes in data from bilingual parents

Item inserted <sup>a</sup>	No. clear insertions	No. poss. insertions	No. all insertions	% Total insertions
Noun	204	56	260	60.2
Eng sg N	175	41	216	50.0
Eng pl N	2	0	2	0.5
Eng sg mod N	11	4	15	3.5
Eng pl mod N	1	0	1	0.2
Eng sg NP	7 <sup>b</sup>	8 <sup>b</sup>	15 <sup>b</sup>	3.5
Inu sg N	3	3 <sup>c</sup>	6 <sup>c</sup>	1.4
Inu sg NP	1 <sup>b</sup>	0	1 <sup>b</sup>	0.2
Eng N and V	4	-	4	0.9
Verb	109	27	136	31.5
Eng V	58	15	73	16.9
Eng sg N as V	42	7	49	11.3
Eng pl N as V	2	0	2	0.5
Eng mod N as V	5	4	9	2.1
Eng ADJ as V	1	1	2	0.5
Inu V	1	0	1	0.2
Adverb	14	1	15	3.5
Eng adverb	3 <sup>d</sup>	0	3 <sup>d</sup>	0.7
Eng N as adverb	3	0	3	0.7
Inu adverb	8 <sup>b</sup>	1 <sup>b</sup>	9 <sup>b</sup>	2.1
Adjective	7	4	11	2.5
Eng adjective	6	2	8	1.9
Inu adjective	1	0	1	0.2
Inu V as adjective	0	2	2	0.5
Conjunction	10	0	10	2.3
Eng conjunction	7 <sup>e</sup>	0	7 <sup>e</sup>	1.6
Inu conjunction	3	0	3	0.7
TOTAL	344	88	432	100

<sup>a</sup> Eng = English, Inu = Inuktitut, sg = singular, pl = plural, mod = modified or compound, N = noun, NP = noun phrase, V = verb, Adj = adjective.

<sup>b</sup> All of these examples could also be analyzed as alternations.

<sup>c</sup> Two of these examples could also be analyzed as alternations.

<sup>d</sup> One of these examples could also be analyzed as an alternation.

<sup>e</sup> Three of these examples could also be analyzed as alternations.

guage (labeled "Possible Insertions") and insertions in longer utterances (labelled "Clear Insertions").

4.1.1. Nominal insertion mixes: English into Inuktitut

Muysken (2000) focuses on nominal insertions as the most common type of insertion mixes across all the studies he reviewed. He distinguished four types of nominal constituents which can be inserted: (a) bare nouns, (b) noun phrases (noun plus adjective or complement), (c) noun phrases marked for number, gender and definiteness, and (d) full determiner phrases. Not surprisingly, nominal insertions are also the most common type of insertions in the English-Inuktitut data comprising 60% of all insertions.

More than half of the insertion mixes comprise a single bare noun in English mixed into an utterance which otherwise follows the grammar of Inuktitut. The full list of inserted nouns includes airplane, animal, baby, ball, Band-Aid, baseball, book, box, brush, bubble, cake, candy, cereal, cheese, choo-choo, cigarette, cookie, corner, dad, daycare, dinosaur, eight, elephant, garbage, goatie, goose, gorilla, grandma, grandpa, helicopter, juice, Kleenex, monkey, moon, orange, paint, pamper, paper, pizza, puck, pussy, remote, school, skidoo, spaghetti, spider, spoon, tea, teddy, turtle, TV, two, water, watermelon, and zipper. As noted earlier, some of these nouns are established loan words (e.g. pussy, tea, TV). Not surprisingly, many of the other nouns also denote referents which have been introduced to Inuit life through contact, even though they have not yet become established loan words (e.g., dinosaur, pizza, remote). Most of these referents have an Inuktitut equivalent, although it is typically more awkward than the monomorphemic English term. Notably, however, many English nouns are mixed into Inuktitut utterances, even though they denote referents that are not culturally foreign, and they have commonly used Inuktitut equivalents (e.g., baby, moon, water).

Inserted nouns appear in many different structural positions in the utterance. A large proportion appear in an argument position: as the subject of a transitive verb (5a), the subject of an intransitive verb (5b), the object of a transitive verb (5c), the object of an intransitive verb (5d), the object in a noun incorporation construction (5e), or the object in a copular construction with no overt verb (5f).

- (5) a. *Grandma*-u pi -tari -langu-ja-ga.  
-ERG.SG EXPL-have.as-FUT -PAR.3S.3sO
- 'Grandma is going to have it.' (Mother, PN 3;3)
- b. *Bubble* ilin -nu -u -si -juq.  
YOU-ALL-go.to-PRS-PAR.3S
- 'The bubble is coming towards you.' (Mother, PN 3;0)

- c. *Remote* qai -saa -li -ruk.  
come-quickly-POL-IMP.2s.3sO
- 'Quickly, give me the remote.' (Mother, AI 2;11)
- d. *Book*-mi uqalimaa-lau -rit?  
-MOD.SG read -POL-IMP.2sS
- 'Do you want to read a book?' (Mother, SA 2;9)
- e. *Maani*-i -gii *goalie*-u -nia -rama?  
here -be-IMP.2sS -be-FUT-CTG.1sS
- 'Can you be here so I can be the goalie?' (Mother, SR 2;1)
- f. *Miki* -ju -rulu *turtle*?  
be.small-PAR.3S-DIM.PEJ
- 'Is that horrid little turtle small?' (Father, AI 3;9)

Inserted nouns also appear in other grammatical roles — as the object of preposition (6a), the subject (6b) or object (6c) of possession, as part of an adjectival phrase (6d), a question phrase (6e), or a conjunction phrase (6f).

- (6) a. *Daycare*-mi aningua -qqau-visi?  
-LOC.SG play.outside-PST -INT.2PS
- 'Did you ALL go outside to play at daycare?' (Mother, AI 2;11)
- b. *Baby*-mima akka -nga.  
-ERG.1sSG hand-ABS.3sSG
- 'My baby's hand.' (Mother, AW 1;8)
- c. *Nau* anaana-u *airplane*-nga?  
where mother-ERG.SG -ABS.3sSG
- 'Where is mommy's airplane?' (Father, AI 3;9)
- d. *Box*-nungua -liu -runnar-mi -ju.  
-pretend-make-can -also-PAR.3sS
- 'It can also make a pretend box.' (Mother, SA 2;5)
- e. *Elephant*-li panik?  
-where daughter
- 'Where is the elephant, daughter?' (Mother, AW 2;6)
- f. *Ta* -akkua *granny*-lu *grandpa*-lu.  
PRE-those.ones -and
- 'Those are grandma and grandpa.' (Mother, AW 2;1)

All of the examples given in (5) and (6) are fairly clear as to which is the base language and which is the language of the insertion mix. All contain more morphemes in Inuktitut than in English, and contain grammatical morphemes in Inuktitut but only lexical morphemes in English. These are two primary criteria for determining the base language (e.g. Muysken 2000, Myers-Scotton 199:

However, as already noted in section 3.3, a number of other examples contain only one word or morpheme in each language and thus are less clearly analyzed as insertion mixes. We have determined the base language to be the language which contributes the word order or grammatical structure of the utterance, and/or the language which contributes the grammatical morphemes (if any). Some examples are given in (7), with Inuktitut as the base language in (7a-b) and English as the base language in (7c).

- (7) a. Nauk *flower*?  
where  
'Where is the *flower*?' (Father, AI 3;9)
- b. *Bed*-ngani.  
-LOC.3SSG  
'In its *bed*?' (Mother, PN 3;5)
- c. *Your* putuguk?  
toe  
'(Is that) *your* toe?' (Mother, PN 3;5)

In addition to English bare nouns, English noun phrases which include bare nouns modified by an adjective or complement are also inserted into Inuktitut utterances. These are mostly compounds or fixed phrases including *teddy bear*, *high school*, *soccer ball*, *cough syrup*, and *coffee table*; an example is given in (8a). However, a few instances are modified nouns which do not constitute fixed phrases including *juice cup*, *last name*, and *little foot* as in (8b).

- (8) a. *Cough syrup*-mi pi -guma-vit?  
-MOD.SG EXPL-want -INTER.2SS  
'Do you want some *cough syrup*?' (Mother, SA 2;9)
- b. Na -munnga-ar -qai *juice cup*?  
where-ALL -go.to-IND.2S.3sO  
'Where did you put the *juice cup*?' (Mother, AI 3;9)

Note that a few of the two-word or two-morpheme utterances illustrated in (7) also occur with fixed phrases (where the phrase is counted as one word), notably *high school*, *birthday cake*, and *soccer ball*.

Although the vast majority of both bare noun and noun phrase insertions are singular, three occur with plural marking as illustrated in (9). (See also one ungrammatical example documented in 42a.) These exemplify Muysken's (2000) third type of nominal insertion — bare nouns or noun phrases marked for gender, number, and definiteness. Neither English nor Inuktitut mark gender or definiteness on common nouns, although English marks gender on pronouns and definiteness on the article (theories differ about whether and how Inuktitut marks definiteness). Both languages mark number through nominal inflection.

- (9) a. Ma -unnga *candies*-raalum-mut.  
here-ALL -EMPH -ALL.SG  
'To all the *candies* over here.' (Mother, AI 3;9)
- b. *Cards*-qa -nngi.  
-have-NEG  
'There aren't any *cards*.' (Mother, SA 2;5)
- c. Taku-niar-tangit *Hallowe'en candies*-tit.  
see -FUT-PAR.3sS.3pO -ABS.2SPL  
'She'll see your *Hallowe'en candies*.' (Mother, SA 3;2)

These utterances appear somewhat problematic for Muysken's (2000: 8) theory that the activation of the language which contributes the inserted nominal element is "temporarily diminished." Since the nouns in (9) all have plural marking from English, it does not seem that the English grammatical system can be completely deactivated. None of the examples in (9) could qualify as alternations since none of them contain a fully grammatical English determiner phrase; the required determiner for a plural count noun is either not present (9a-b) or is in Inuktitut (9c).

The fourth type of nominal insertion in Muysken's (2000) framework is a full determiner phrase. The English-Inuktitut data contains seven such instances in utterances with clear insertion. Six comprise a noun plus a possessive determiner as illustrated in (10a); they include *your sock*, *your shirt*, *your fork*, *your name*, *your poster*, *your shovel* and *yours*. The seventh involves a possessive pronoun as shown in (10b). Full determiner phrases also occur in eight of the two-morpheme examples discussed in (7) above (where the determiner phrase is considered one word). The insertions include *one more*, *the fish*, *your cup*, *your fork*, *your nose*, *your shirt*, and *your truck*. Examples are shown in (11).

- (10) a. Tigujara *your fork*?  
take-PAR.1sS.3sO  
'Did I take *your fork*?' (Mother, AI 3;2)
- b. *Yours* takanna  
that.one.down.there fall -PAR.3sS  
'*Yours* is the one that fell.' (Mother, AI 3;2)
- (11) a. Nauk *your nose*?  
where  
'Where is *your nose*?' (Mother, AI 3;9)
- b. Takkar-tau *one more*.  
there -also  
'There's still *one more*.' (Mother, SR 2;1)



It is important to note that all of these instances of insertion of full determiner phrases could also be analyzed as alternation mixes, since there is a complete grammatical phrase in each language, and the switch point between the phrases is consistent with the grammar of both languages. We have included them here as insertions because they are specifically discussed as such in Muysken's (2000) framework.

#### 4.1.2. Nominal insertions: Inuktitut into English

In contrast with the very large number of mixes of English nominal elements into Inuktitut, there are many fewer mixes of Inuktitut nominal elements into English. The data reveal only six instances of an Inuktitut bare noun insertion, three in full English utterances (12) and three in two-morpheme utterances such as those discussed in section 4.1.1 (13). The nouns used include *apaapa* 'food', *immuk* 'milk', *inna* 'that one', *kiguti* 'tooth', *nukaq* 'younger brother', and *putuguk* 'toe'. All of these nouns have equivalents in English that are used frequently, so there appears to be no cultural reason for them to be mixed into the English utterances. Note that utterances like that in (13a) could also be analyzed as alternation.

- (12) a. *You want some apaapa?*  
           food  
       'You want some food?' (Mother, PN 3;0)  
   b. *Look only one kiguti.*  
           tooth  
       'Look, only one tooth.' (Mother, PN 3;5)
- (13) a. *Shoot inna.*  
           that.one  
       'Shoot that one.' (Father, SR 2;2)  
   b. *Your putuguk?*  
           toe  
       '(Is that) your toe? (Mother, PN 3;5)  
   c. *Or immuk?*  
           milk  
       'Or milk?' (Mother, AI 2;11)

2. *Inna* 'that one' is technically not a bare noun. It is comprised of a demonstrative root *itsu-* 'there away' and an absolutive singular case marker *-na*. However, because of the high frequency of use of such demonstratives, it is likely that speakers treat them as single words rather than morphologically complex units. The categorization of *inna* as a bare noun vs. a nominal phrase is not relevant for the mixing analysis here.

A further fifteen utterances exemplified in (14) involve Inuktitut kinship terms used in otherwise English utterances: *api* 'older brother', *anaana* 'mother', *ataa* 'father', and *nukaapik* 'younger brother'. These terms appear to be treated as proper names, since they are used without the determiners that would be required if they were common nouns, as illustrated in (12a) and (12b). Because these terms are used as proper names, they are considered equivalent in the two languages and thus are not counted here as insertions.

- (14) a. *Oh it's nuka*                   -*apik*-*'s fault*.  
           younger.brother-DIM  
       'Oh, it's younger brother's fault.' (Mother, AI 3;2)  
   b. *Anaana tried calling this morning.*  
           mother  
       'Mommy tried calling this morning.' (Mother, SR 2;1)

Only one utterance involves mixing an Inuktitut noun phrase into English shown in (15). This could also be analyzed as alternation, since each phrase grammatical in its own language, and the switch point is a possible one for both languages.

- (15) *Where's pualu -kki?*  
       mitten-ABS.2Sdu  
       'Where's your mittens?' (Mother, PN 3;0)

This utterance is technically ungrammatical since the English portion should be *where are* rather than *where is*. However, the use of *where's* in this context is extremely common, even among monolingual native English speakers, and thus the utterance was deemed colloquially appropriate.

In sum, nominal insertions are the most common type of insertions in the English-Inuktitut bilingual data. Virtually all of these are insertions of English nominal elements into Inuktitut utterances, although there are a few instances of Inuktitut nominal elements inserted into English utterances. Within each language, the vast majority of nominal insertions involve bare nouns. A few instances of modified nouns, number-marked nouns, and full determiner phrases are also evidenced. The latter in particular can also be analyzed as alternations.

#### 4.1.3. Verbal insertions

The second largest group of insertions involves a verb root from one language inserted into an utterance in the other language. As was the case for nominal insertions, far more English verbs are inserted into Inuktitut than vice versa in our data set. In fact, only one instance of an Inuktitut verb inserted into English was found

The majority of the verbal insertions include simple English verb roots such as *color*, *dance*, *kick*, *pee-pee*, and *wash up*, as well as one instance each of *catch*, *clean up*, *lock*, *order*, *pick up*, *rewind*, *roller skate*, *share*, *skate*, and *tickle*. Most are followed by simple imperative or interrogative morphology as shown in (16), although more complex utterances also occur.

- (16) a. *Ikaju-laur-lagi peepee-nia -ravi.*  
 help -POL-IMP.1sS.2sO -FUT-CTG.2sS  
 'Let me help you so you can pee.' (Father, AW 1;11)
- b. *Una color-li -ruk.*  
 this.one -POL-IMP.2sS.3sO  
 'Color this one.' (Mother, PN 3;0)
- c. *Share-ruma-vit?*  
 -want -INTER.2sS  
 'Do you want to share?' (Mother, AI 2;11)

A number of English nouns are also inserted as verbs into Inuktitut utterances. This is perhaps not surprising since both languages allow many roots to be used as both verbs and nouns (e.g. *jump* in English, *qangattajuuq* 'airplane, fly' in Inuktitut). English nouns used in these constructions include *a-b-c*, *airplane*, *ball*, *bath*, *bubble*, *daycare*, *Hallowe'en*, *hockey*, *Honda*, *hopscotch*, *ice cream*, *slap shot*, *soccer*, *tea*, and *three*. These constructions are exemplified in (17).

- (17) a. *Na -mut airplane-laa -rannu?*  
 where-ALL -FUT-CTG.2dS  
 'Where will we fly to?' (Mother, SA 2;9)
- b. *Ball-ti -guma-jait?*  
 -CAUS-want -PAR.2sS.3sO  
 'Do you want him to play ball?' (Father, AI B;8)
- c. *Ta -anna kina Hallowe'en-tu?*  
 PRE-this.one who -PAR.3sS  
 'Who is that Hallowe'en-ing?' (Mother, SA 2;5)

In addition, a few English compound nouns (18a-b) as well as two plural nouns (18c-d) are inserted as verbs into Inuktitut utterances. The compound nouns include *bedtime*, *caribou hunt*, and *happy birthday*.

- (18) a. *Ataata-guu caribou hunt-tu.*  
 father -REPORT -PAR.3sS  
 'Reportedly father is caribou hunt-ing.' (Mother, PN 3;5)

- b. *Bedtime-ruma-lir -qit?*  
 -want -POL-INTER.2sS  
 'Do you want to go to bed?' (Mother, AI 2;11)
- c. *Shorts-sima-laa -ravi.*  
 -PFV -FUT-CTG.2sS  
 'You will be (wearing) shorts.' (Mother, SA 2;9)
- d. *Nuka-it*  
 younger.brother-ABS.2sSg  
 pingua-qati -gi -li -ru  
 play -companion-have.as-POL-IMP.2sS.3sO  
*dishes-nia -rama.*  
 -FUT-CTG.1sS  
 'Play with your little brother because I'm going to (do) the dishes.' (Mother, AI 2;11)

Finally, two English adjectives are also inserted as verbs, as shown in (19).

- (19) a. *Broken-tu -alu.*  
 -PAR.3sS-EMPH  
 'It's really broken.' (Mother, PN 3;0)
- b. *Stuck-su?*  
 -HAB  
 'It gets stuck?' (Mother, AI 3;2)

This use of adjectives as verbs is not surprising for two reasons. First, manyjectives in English are realized grammatically as verbs in Inuktitut (e.g. *miki-small*). Second, Inuktitut has many causative alternation verbs for which the transitive form can also be interpreted as a stative adjective (e.g. *sukkutanga* 'has spoiled it', *sukkutuuq* 'it spoils; it is spoiled'). Thus, a speaker of Inuktitut might well attribute similar verbal properties to English adjectives, a similar phenomenon to the crosslinguistic influence often experienced especially by young bilinguals (e.g. Yip & Matthews 2000).

As noted earlier, only one instance of an Inuktitut verb being inserted into English utterance was found, as shown in (20).

- (20) *We'll apaapa.*  
 eat  
 'We'll eat.' (Mother, PN 3;0)

This is not very surprising given the salience and extensiveness of verbal affixation and inflection in Inuktitut compared with its relative absence in English. Since verbal morphology is obligatory in Inuktitut, one might expect a strong inhibitory

on the part of speakers to produce an Inuktitut verb root without any morphology. The same inhibition would not be expected for nouns since they may appear without inflection or other affixation in many contexts in Inuktitut.

Interestingly, the verb used in (20) is part of the nursery vocabulary, a set of lexical items parallel to the adult counterparts that are used when speaking with children younger than about 3 years of age (Crago & Allen 1997; Crago, Allen & Pesco 1998). The adult counterpart of *apaapa-* is *niri-* 'eat'. In addition, like a small but significant set of verb roots in Inuktitut (and English), *apaapa-* can be used as both a verb and a noun. Therefore, it is not surprising that this particular verb root would appear mixed into English.

Four utterances in the data involve insertion of both a noun and a verb, as shown in (21). The insertions are all English, while the base language is Inuktitut.

- (21) a. *Airplane-rulu magic-ti -nungua -ru.*  
 -DIM.PEJ -CAUS-pretend-IMP.2S.3sO  
 'Make the little airplane do (some) magic.' (Father, AI 3;9)
- b. *Ataata-it hockey-ti -lugu*  
 father -ABS.2SSG -DS-ICM.XXS.3sO  
*arena-lia -nia -qinuk?*  
 -go.to-FUT-INTER.1ds

'Shall we go to the arena later while your father is playing hockey?' (Mother, AW 2;1)

To summarize, insertion of verbal elements is the second-largest type of insertion used by Inuktitut-English bilinguals. Virtually all of these are English insertions into Inuktitut; only one instance of the reverse was found. Most of the verbal insertions are simple verb roots. However, a number of nouns, compound nouns, and adjectives are also inserted in the verb slot and used as verbs.

#### 4.1.4. Adverb insertions

Adverbs are also inserted only rarely in the mixes in our data. Six utterances contain English adverbs (22a) or nouns used as adverbs (22b) inserted into Inuktitut. Adverbs include *after*, *Friday*, *lunch time*, and *too small*:

- (22) a. *Emily-mu-u -nia -ratta after.*  
 Emily-ALL-go-FUT-CTG.1pS  
 'We'll go to Emily after.' (Mother, SR 2;1)
- b. *Suna-tur -qau-vi lunch time?*  
 what-consume-PST-INTER.2sS

'What did you eat (at) lunch time?' (Father, AI 3;2)

Nine utterances contain Inuktitut adverbs inserted into English, as shown in (23). The adverbs include *atsualu* 'hard', *imaak* 'like this', *maani* 'here', *maann* 'over here', *siaru* 'later', *tagga* 'over there', and *taika* 'over here'.

- (23) a. *How about a rink shot imaak.*  
 like.this
- 'How about a rink shot like this?' (Mother, SR 2;10)
- b. *Blow atsu -alu.*  
 hard-EMPH
- 'Blow hard.' (Father, AI 3;0)

Unlike adjectives, adverbs are realized similarly in English and Inuktitut as independent words modifying verbs and verb phrases. Because of the similarity in structure and word order, many of the adverb insertions in the data could also be analyzed as alternations. Those in (22a) and (23) are each fully grammatical in their own language, and the switch point is appropriate for both languages. The example in (22b), however, is clearly an insertion because the correct English adverbial phrase would require a preposition (i.e., *at lunch time*) which is not required in Inuktitut.

#### 4.1.5. Adjective insertions

Only a few adjective insertions are evidenced in the code-mixing data. A total of eight utterances contain English adjectives in Inuktitut utterances, as shown in (24). Adjectives used are *clean*, *dirty*, *funny*, *hot*, *last*, *lots*, *messy*, and *mushy*. Mo are in copular structures (24a-b), but a couple are not (24c).

- (24) a. *Nuja-ti funny-u -lir -mata.*  
 hair -ABS.2SPL -be-PRS-CTG.3pS  
 'Your hair is funny.' (Father, AW 2;1)
- b. *Ta -anna messy ta -anna clean.*  
 PRE-that.one PRE-that.one  
 'That one is messy, that one is clean.' (Mother, PN 2;8)
- c. *Lots-niangat.*  
 -FUT  
 'There will be lots.' (Mother, PN 3;0)

Only three Inuktitut adjectives are inserted in English utterances (all shown in 25), either affixed to the English noun (25a) or independent (25b). In (25b), the inserted element is actually a nursery verb root being used as an adjective.

- (25) a. *Here's your tea-nnguaq.*  
 -pretend  
 'Here's your pretend tea.' (Mother, PN 3;5)

- b. *Yep, tutaak time.*  
sleep

'*Yep, bedtime.*' (Father, AI 3;0)

Adjective insertion is not a common option in code mixing in general, but may be even less preferred in code mixing in the English-Inuktitut pair because of the differences across the two languages in how adjectives are realized. Adjectives appear as independent elements in English, typically preceding the noun. In Inuktitut, they appear either as suffixes following the noun as in (25a) or as verb roots such as *miki* 'be small' shown in (5e).

#### 4.1.6. Conjunction insertions

Finally, a small number of examples constitute insertions of conjunctions from one language into utterances from the other. English insertions include *and* and *or* as illustrated in (26a). Inuktitut insertions include *-lu* 'and' and *-ttauuq* 'also' as shown in (26b).

- (26) a. *Or ataata-vit amiaju-vaatit?*  
father-ERG.2SSG paint -IND.3S.2sO  
'Or did your father paint you?' (Mother, SA 3;2)
- b. *Steve-lu want to play ball?*  
Steve-and  
'Want to play ball with Steve?' (Mother, PN 3;0)

English realizes conjunctions as independent words, while Inuktitut realizes conjunctions both as independent words and suffixes. The Inuktitut utterances with inserted English conjunctions in our data could thus be analyzed as alternations because the phrases in each language are fully grammatical in that language and because the switch points are appropriate for both languages. The English utterances with Inuktitut insertions could not be analyzed as alternations because all of the examples involve a suffix in Inuktitut which was no similarly structured counterpart in English. Note that the Inuktitut conjunction is always suffixed onto a proper noun in the mixing data discussed here, as in (26b). However, the conjunction plus proper noun does not form a sentential constituent.

#### 4.1.7. Either alternation or insertion mixes

As noted in the earlier sections, a number of the mixes we have included in the insertion section could plausibly be analyzed as alternation mixes as well. These are summarized here:

- a. 15 insertions of a full English determiner phrase into an Inuktitut utterance (10-11)

- b. 2 insertions of an Inuktitut object noun (13a) or noun phrase (15) into an English utterance
- c. 1 insertion of an Inuktitut noun into an English conjunction utterance (13c)
- d. 1 insertion of an English adverb into an Inuktitut utterance (22a)
- e. 9 insertions of an Inuktitut adverb into an English utterance (23)
- f. 3 insertions of English conjunction into an Inuktitut utterance (26)

These have all been analyzed as insertions because the mixed element in one of the languages is either one monomorphemic word, or a noun or determiner phrase in the case of nominal insertions. However, in each case, that element also forms a complete phrase, and the switch between the two languages occurs where the word order in each of the two languages makes it grammatical.

#### 4.1.8. Summary of insertion mixes

As is evident from the earlier sections, insertion mixes are very common in the English-Inuktitut code-mixing data. The most frequent are nominal mixes, followed by verbs, adverbs, adjectives, and conjunctions in that order. The prevalence of insertion mixes is very consistent with the typological features of this language pair. Because the morphosyntactic structures and word orders of the two languages are very different, the languages have few switch points in common that would enable alternations. Further, sociolinguistic characteristics are also consistent with insertion mixing: initial colonial contact between monolingual speakers of the two languages, a proficiency difference in most bilinguals between the two languages, a prestige difference between the two languages, increasingly intense contact between the two languages, and no strong attitudinal barriers against mixing. Nevertheless, a few typological features point to the possibility of alternation mixing as well; this is explored in the next section.

#### 4.2. Alternation mixes

One third of the mixes in the data set are what Muysken (2000) terms alternation mixes, such that one part of the utterance follows the grammar of English and the other follows the grammar of Inuktitut. The different patterns of alternation mixing are listed in Table 4, with frequencies for each.

As indicated in the table, there are four main types of alternation mixes in the data: a tag in one language with the rest of the utterance in the other; a quote in one language with the rest of the utterance in the other; an utterance in one language with part or all of the utterance translated into the other; and a verb phrase in one language with the rest of the utterance in the other.

Table 4. Alternation mixes in data from bilingual parents

Alternation type <sup>a</sup>	No. clear alternate	No. poss. alternate	No. all alternate	% Total alternate
Tag + Utterance	123	58	181	70.7
Eng tag, Inu utt	88	23	111	43.4
Eng voc tag, Inu utt	3	0	3	1.2
Inu tag, Eng utt	16	15	31	12.1
Inu voc tag, Eng utt	16	1	17	6.6
Eng tag + Inu tag	0	19	19	7.4
Quote	37	-	37	14.5
Eng quote, Inu utt	35	-	35	13.7
Inu quote, Eng utt	2	-	2	0.8
Translation equivalent	18	-	18	7.0
Real alternation	7	-	7	2.7
Inu VP, Eng AdjP	3	-	3	1.2
Inu VP, Eng ObjP	1	-	1	0.4
Inu VP, Eng V	3	-	3	1.2
Alternate + insertion	13	-	13	5.1
TOTAL	198	58	256	100

<sup>a</sup> Eng = English, Inu = Inuktitut, utt = utterance, voc = vocative, V = verb, VP = verb phrase, AdjP = adjunct phrase, ObjP = object phrase.

#### 4.2.1. Tags

The largest group of alternation mixes involves a tag in one language with the rest of the utterance in the other — a total of 181 of the 256 alternation mixes (71%). One hundred and eleven of these involve an English tag as in (27), and included the tags *look*, *no*, *nothing*, *okay*, *ouch*, *please*, *see*, *thank you*, and *yeah*. A further 31 involve an Inuktitut tag as in (28), including *aak* 'here', *ai* 'right', *aqaa* 'yes', *atai* 'okay', *atii* 'okay', *atsuu* 'more', *ii* 'hey', *kisu* 'what', and *taima* 'enough'. The remaining 19 are comprised of tags in both languages as in (29).

- (27) a. *No ahaa-jaangit-tuti.*  
hurt-NEG -PAR.2sS  
'No, you're not hurt.' (Mother, SR 2;1)  
b. *Yeah marruu.*  
two  
'Yeah, two of them.' (Father, AI 3;9)

- (28) a. *Atii where's the remote?*  
hey  
'Hey, where's the remote?' (Mother, AI 3;0)

- b. *Ilai elephant.*  
right  
Right, (it's an) *elephant*. (Mother, AW 3;6)

- (29) a. *Atai look.*  
okay  
'Okay, look.' (Mother, PN 3;0)  
b. *Okay taima.*  
enough  
'Okay, (that's) enough.' (Father, SR 2;0)

Kinship terms used as vocatives were also considered a type of tag (listed as "vocative tag"), as shown in (30). These include *baby* and *kids* in English, and *ana* 'mother', *irriiq* 'son', and *panik* 'daughter' in Inuktitut.

- (30) a. *Irnii blow your nose.*  
son  
'Son, blow your nose.' (Father, AI 3;0)  
b. *Kids su-ruluu -ja -saa -ritsi.*  
do-DIM.PEJ-often-quickly-IMP.2ps  
'Kids, do something quickly.' (Mother, SA 2;5)

Of the total number of mixed utterances with tags in one language, the non-portion of the utterance was a complete sentence in 123 instances (as in 27a, 28 and 30), and a single word in the remaining 58 instances (as in 27b, 28b, and 29).

#### 4.2.2. Quotations

The second type of alternation mix involves a quote in one language and the rest of the utterance in the other language (15% of alternation mixes). Interestingly, the quoted portion of the utterance was in English in all of the examples in our data set. These utterances typically involved a parent telling a child to say something in English (31) or telling a child what someone else said in English (32).

- (31) a. *"Bye-bye"-li -rit, paani.*  
-POL-IMP.2sS daughter  
'Say "bye-bye", daughter.' (Father, AW 1;11)  
b. *Alkar-mu inngi-ri "happy birthday".*  
uncle -ALL.SG sing -IMP.2sS  
'Sing "happy birthday" to your uncle.' (Mother, SA 2;5)
- (32) a. *"You bad boy" la-juq.*  
say-PAR.3sS  
'He said "you bad boy".' (Mother, AI 2;11)

- b. "Who's that"-*guuq*.  
-REPORT  
'(She) said "who's that?'" (Mother, PN 3;5)

#### 4.2.3. Translations

A further 18 utterances (7% of alternation mixes) include a translation of at least part of the utterance from one language into the other. Some of these utterances use the translation as a repetition for emphasis (33a), others indicate a change in choice of which language to use (33b), and still others use one language to highlight a topic and the other to comment on it (33c).

- (33) a. Unar-tu -alu *hot*.  
hot -PAR.3sS-EMPH  
'It's very hot. *hot*.' (Mother, AW 1;8)
- b. *Puppy*-ngua ... qimmi-ngua -liu -ri.  
-imitation dog -imitation-make-IMP.2sS  
'Puppy ... draw a dog.' (Mother, SA 2;5)
- c. Una *that's too big*.  
this.one  
'This one, *that's too big*.' (Mother, PN 3;0)

#### 4.2.4. "Real" alternations

The final and smallest set of alternation mixes (3%) are of the type most traditionally assumed in the literature: a full phrase or clause in each of the two languages. There are very few of these in the Inuktitut-English data, presumably because there are few available switch points that correspond in an utterance because of the very different typologies of English and Inuktitut. All of these utterances in our data involve an Inuktitut verb phrase, three with an English adverbial phrase (34), three with an English verb (35), and one with an English subject noun phrase (36).

- (34) a. Kuvi-langa-gavi *on your pants*.  
spill-FUT-CTG.2sS  
'Since you're going to spill *on your pants*.' (Mother, SR 2;1)
- b. Kuvi-langa-juti *on your pants*.  
spill-FUT-PAR.2sS  
'You're going to spill *on your pants*.' (Mother, SR 2;1)
- c. *After bath* runna -quti.  
be.able-IND.2sS  
'You can (do it) *after (your) bath*.' (Mother, SR 2;1)

- (35) a. Qai -gi *look*.  
come-PAR.2sS  
'Come and *look*.' (Mother, SR 2;5; Mother, PN 3;0)
- b. Qai -gi *sit*.  
come-PAR.2sS  
'Come and *sit*.' (Mother, SR 2;1)
- (36) *Yours* ta -kanna *katat-tu*.  
PRG-this.one.down.there fall -PAR.3sS  
'*Yours* down there is the one that fell.' (Mother, AI 3;2)

At least five other utterances of this type were spoken by the parents to other interlocutors in the presence of the child, as shown in (37). Speech to interlocutor other than the child was not consistently transcribed, and thus was not included in the figures represented in the tables. However, it is likely that children pay attention to overheard talk, especially overheard talk that is part of a conversation involving them. Undoubtedly, a number of other utterances like those in (37) were spoken during the sessions but not transcribed.

- (37) a. Milki -gili-kaar-tanga -una *by next summer anyways*.  
be.small-too-FUT-PAR.3sS.3sO-this  
'This will be too small for him *by next summer anyways*.' (Mother, AI 3;8)
- b. Tusar-tau -jaanngi *with that thing on*.  
hear -PASS-NEG  
'He can't be heard *with that thing on*.' (Mother, AI 3;8)
- c. Sini -kainna-rami -una pani -ga *maybe ten minutes*.  
sleep-PST -CTG.4sS-this daughter-ERG.SG  
'This daughter of mine just slept (for) *maybe ten minutes*.' (Mother, SA 2;5)
- d. Taima-i -pak -tu *for an hour*.  
thus -be-habitually-PAR.3sS  
nilli-laursima-tsiak-pa -nngii.  
talk-PFV -well -habitually-NEG  
'She gets like that, *for an hour* she is not saying much.' (Mother, SA 2;5)
- e. Ubba maani ulu -guluk *for you guys*.  
these.ones here ulu.knife-DIM  
'Here are these little ulu knives *for you guys*.' (Mother, SA 2;7)

4.2-5. *Summary of alternation mixes*

Taken together, these alternation mixes reveal that adults are quite sensitive to the typological differences between English and Inuktitut. There are very few points where the grammars of English and Inuktitut converge, and thus very few points where a switch from one grammatical system to the other would be possible. The vast majority of the alternation mixes in the data evidence the main utterance in one language and only an appositional element — tag, quote, or “extra” translation — in the other language. Only seven of the alternation mixes have a switch point within the utterance, typically between the verb phrase in Inuktitut and an adverbial or noun phrase in English. Note that a further 31 utterances could be analyzed as alternation mixes as indicated in section 4.1.7. These involve one word (conjunction, adverb, noun) that also constitutes a full phrase in its own language, or else one full determiner phrase that occurs in the same sentence as a phrase in the other language.

## 4.3. Both alternation and insertion mixes

In addition to pure insertion mixes and alternation mixes, several utterances can best be analyzed as part alternation and part insertion. These come in three types. The first constitutes alternation in that a tag is in English while the rest of the utterance is in Inuktitut. However, there is also an English noun (38a), verb (38b), or adjective (38c) insertion in the Inuktitut portion of the utterance.

- (38) a. *Yeah juice-tu* -langu-vuttit siaruai.  
 -consume-FUT -IND.2sS wait  
 ‘Yeah, you’ll get some juice, but wait.’ (Mother, AI 2;11)
- b. *Color-rit imaak look.*  
 -IMP.2sS like.this  
 ‘Color like this, look.’ (Mother, PN 3;0)
- c. *Look nuka* -it nice.  
 younger.brother-ABS.2sSG  
 ‘Look, your younger brother (is) nice.’ (Mother, AI 2;11)

The reverse pattern also exists in one utterance, with an Inuktitut tag and then an Inuktitut noun inserted into the remaining English utterance, as in (39).

- (39) *You want to read to me and your nukak qai?*  
 younger.brother right  
 ‘You want to read to me and your younger brother, right?’ (Mother, AI 3;1)

Finally, a few utterances evidence alternation between two clauses with mixing in one or both clauses. Complex mixing of this sort tends to occur in the

speech of very fluent bilinguals (Poplack, 1980). In (40a), the tag and core sentence are in English with an Inuktitut NP insertion while the locative phrase is Inuktitut with an English noun insertion. In (40b), the first clause is in Inuktitut with an English noun insertion while the second clause is completely in English

- (40) a. *See there’s aja -it playground-mi.*  
 aunt-ABS.2sSG -LOC.SG  
 ‘See, there’s your aunt at the playground.’ (Mother, SR 2;1)
- b. *Hallowe’en-qquau-gavit do you like it now?*  
 -PST -CTG.2sS  
 ‘Since you just had Halloween, do you like it now?’ (Mother, AI 3;8)

A couple of additional examples of this type are found in utterances directed to the parents to older children or adults during the taping sessions. These are shown in (41).

- (41) a. *Dad-ni apiri-giaqa-lir -qi.*  
 -MOD.2sSG ask -must-PRS-INTER.2sS  
 taima then about your car?  
 enough  
 ‘Do you now have to ask your dad then about your car?’ (Mother, AI 3;8)
- b. *Nusu-gia -laur-sima-jara -luara*  
 pull -try.to-PST -PFV -PAR.1sS.3sO-EMPH  
 rope-patiju-raalu I was tied to nothing.  
 -big- EMPH  
 ‘I tried to pull this big rope but I was tied to nothing.’ (Father, SA 2;8)

Although this form of mixing appears rather random, almost like congrue lexicalization, on closer inspection, it does follow a systematic pattern.

## 4.5. Word order and grammar fit neither language

Finally, several utterances are used which are not consistent with the word order grammar of either language. Most of these involve a subject in one language and a verb in the other, but without the proper verbal morphology for either language. Examples are given in (42).

- (42) a. *Ataata-guquq hunting.*  
 father -REPORT  
 [= ataata-guquq tuttu -liar -puq]  
 [= father-REPORT caribou-go.to-IND.3sS]  
 ‘They say that father (is) hunting.’ (Mother, PN 3;5)

- c. *Dirty-alu your pants.*  
 -very  
 ipiu -ju -alu -it]  
 [= pants-ABS.2SSG be.dirty-NOM-very-ABS.PL]  
 'Your pants (are) very dirty.' (Mother, PN 3:0)

None of these utterances could be analyzed as a simple insertion or alternation. In each, the grammatical structure fits neither language.

### 5. Discussion and conclusion

We began this chapter with an outline of Muysken's (2000) framework of code mixing in which he claims that three major types of code mixing occur, depending on the relative structural typologies of the languages being mixed and the sociolinguistic characteristics of the contact situation between the two language communities. Given the typologies and characteristics of English and Inuktitut, the languages mixed in the data we studied, we predicted that English-Inuktitut code mixing data would contain primarily insertion mixes with a few alternation mixes and a few instances of congruent lexicalization.

We indeed found that insertion mixes were the most common pattern, comprising almost two thirds of the code mixes in the data. Also consistent with Muysken's framework, nominal insertions were the most common type of insertion mix, accounting for 60% of the insertions. Verbal insertions were the next largest group, followed by adverb, adjective, and conjunction insertions in that order. Most of the mixes had Inuktitut as a base language with a word from English mixed in. This is not surprising given two factors. First, most of the speakers are more proficient in Inuktitut than in English. Second, English nouns and verbs most often appear without affixation in English, so the bare form which gets mixed in is typical. The same elements most often appear with affixation in Inuktitut, so the bare form is less typical and thus less easily mixed.

Somewhat contrary to our predictions based on Muysken's framework, we also found a large number of alternation mixes accounting for just over a third of the code-mixed utterances in the data set. Although there are few switch points common to both languages, the speakers made good use of those that are available. The majority of alternation mixes consisted of tags, quotations, or transitions in one language with the remainder of the utterance in the other language. However, seven utterances involved full phrases in each of the two languages, and further 31 utterances involved single-word phrases or determiner phrases in one

- b. *Qauppat ivvit happy birthday.*  
 tomorrow you  
 [= qauppat inuulirvi-qar -laa -quitit.]  
 [= tomorrow birthday-have-FUT-IND.2sS]  
 'Tomorrow you (will) have your birthday.' (Mother, AI 3:0)
- c. *You paallak? [= paalla-quit]*  
 trip [= trip -INTER.2sS]  
 '(Did) you trip?' (Mother, PN 3:5)

Two examples involve a verb-object combination, shown in (43). Utterance (43a) is not grammatical in Inuktitut because there is no modalis case marking on the object (required because the verbal inflection is intransitive). It is not grammatical in English because the object has no determiner and the object-verb word order is incorrect. Utterance (43b) is not grammatical in Inuktitut because it lacks the appropriate verbal inflection, and is not grammatical in English because it lacks the required determiner.

- (43) a. *Chicken fingers niri-qqaa-rit.*  
 eat -first -IMP.2sS  
 [= aqiggiua-viniq -mik niri-qqaa-rit]  
 [= chicken -former-MOD.SG eat -first -IMP.2sS]  
 'Eat (the) chicken fingers first.' (Father, AI 3:2)
- b. *Draw tuttu. [= tuttu alla -lau -ruk]*  
 caribou [= caribou draw-POL-IMP.2sS.3sO]  
 'Draw (a) caribou.' (Father, SR 2:2)

Other examples involve possessive phrases (44a), prepositional phrases (44b), and copular phrases. (44a) lacks the possessive marker in both English and Inuktitut as well as the suffix on the possessed item in Inuktitut. (44b) lacks the appropriate adposition in both English and Inuktitut. (44c) lacks the required nominalizer and plural marker in Inuktitut, and the required copula and word order in English.

- (44) a. *Ataatasia guitar.* [= ataatasia-p kukittapauti-nga]  
 grandfather [= grandpa -ERG.SG guitar -ABS.3sSG]  
 'Grandfather('s) guitar.' (Father, AI 2:11)
- b. *Or juice-tuinna-mii juice cup.*  
 -just -MOD.SG  
 [= imira-tuinna-mii imirutu-mi]  
 [= juice -just -MOD.SG cup -LOC.SG]  
 'Or just a juice (in a) juice cup.' (Mother, AI 2:11)



language with the remainder of the utterance in the other, that could equally well be analyzed as insertion mixes or alternation mixes.

Consistent with our predictions, no instances of congruent lexicalization occurred in the data. Although some utterances of this type would have been expected on the basis of the sociolinguistic characteristics of the contact situation between the two languages, the overwhelming differences in the structural typologies of the two languages left no possibility for words in the two languages to alternate frequently within one utterance. The very small number of ungrammatical code mixes overall illustrates that speakers were very sensitive to the linguistic constraints on code mixing and respected them.

The data presented here add to the literature on code mixing in two valuable ways. First, this study constitutes the first thorough analysis of adult code mixing in Inuktitut-English bilinguals, a language pair involving one polysynthetic agglutinative language and one isolating language. These data extend the evidence available in the code-mixing literature on languages of these typologies and provide further substantiation for the finding that speakers are highly sensitive to the structural characteristics of each of their languages in the constraints they follow in their code mixing.

Second, the analysis provides a background against which future instances of Inuktitut-English code mixing can be measured. We have seen that adult bilinguals code-mix in between 2% to 8% of their utterances, and that they fully respect the typological characteristics of their languages when they do so. Code mixing which follows these patterns is unlikely to characterize language loss. However, code mixing which occurs with much higher frequency or which fails to respect typological characteristics is a potential indicator of language loss. Future studies of code mixing in both adults and children can use the present study as a benchmark.

### Abbreviations

1s, 1dS, 1pS	first-person singular subject, dual, plural	XsS	any person singular subject
2sS, 2pS	second-person singular subject, plural	1SSG	first-person singular possessor with singular possessum
2sO	second-person singular object	1SPL	first-person singular possessor with plural possessum
3sS, 3dS, 3pS	third-person singular subject, dual, plural	2SSG	second-person singular possessor with singular possessum
3sO, 3pO	third-person singular object, plural	2SDU	second-person singular possessor with dual possessum
4sS, 4dS	fourth-person singular subject, dual	2SPL	second-person singular possessor with plural possessum
		3SSG	third-person singular possessor with

4SSG	singular possessum fourth-person singular possessor with singular possessum	ICM	incontemporative verbal modality
4DSG	fourth person dual possessor with singular possessum	IMP	imperative verbal modality
ABS	absolutive case	IND	indicative verbal modality
ALL	allative case	INTER	interrogative verbal modality
ANTIP	antipassive	LOC	locative case
CAUS	causative	MOD	modalis case
CTG	contingent verbal modality (because ...)	NEG	negative
CTM	contemporative verbal modality (while ...)	PAR	participative verbal modality (equivalent to indicative)
DIM	diminutive	PASS	passive
DS	different subject than in other clause	PEJ	pejorative
EMPH	emphatic	PFV	perfective
ERG	ergative case	PL	plural
EXPL	expletive	POL	politeness marker
FUT	future	PRE	prefix
HAB	habitual	PRS	present tense
		PST	past tense
		PTCP	participial
		REPORT	reportative
		SG	singular

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# Variations on Polysynthesis

The Eskaleut languages

*Edited by*

Marc-Antoine Mahieu

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