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## Crosslinguistic influence in bilingual acquisition: subject omission in learners of Inuktitut and English

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Journal of Child Language / Volume 32 / Issue 04 / November 2005, pp 893 - 909

DOI: 10.1017/S0305000905007129, Published online: 13 December 2005

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### How to cite this article:

ELIZABETH E. ZWANZIGER, SHANLEY E. M. ALLEN and FRED GENESEE (2005). Crosslinguistic influence in bilingual acquisition: subject omission in learners of Inuktitut and English. *Journal of Child Language*, 32, pp 893-909  
doi:10.1017/S0305000905007129

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NOTE

**Crosslinguistic influence in bilingual acquisition:  
subject omission in learners of Inuktitut and English\***

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(Received 11 June 2004. Revised 27 May 2005)

ABSTRACT

This study investigates subject omission in six English-Inuktitut simultaneous bilingual children, aged 1;8–3;9, to examine whether there are cross-language influences in their language development. Previous research with other language pairs has shown that the morphosyntax of one language can influence the development of morphosyntax in the other language. Most of this research has focused on Romance-Germanic language combinations using case studies. In this study, we examined a language pair (English-Inuktitut) with radically different morphosyntactic structures. Analysis of the English-only and Inuktitut-only utterances of the children revealed monolingual-like acquisition patterns and subject omission rates. The data indicate that these bilingual children possessed knowledge of the target languages that was language-specific and that previously identified triggers for crosslinguistic influence do not operate universally.

INTRODUCTION

Crosslinguistic influence in child bilinguals is an area of study that has received considerable attention in recent years (Döpke, 1997; Müller & Hulk, 2001). Paradis & Genesee refer to this phenomenon as language

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[\*] This study was sponsored by grants from the Social Sciences and Humanities Research Council of Canada to Fred Genesee, Martha Crago, and Shanley Allen. Address for correspondence: Elizabeth E. Zwanziger, Price Laboratory School, University of Northern Iowa, 19th and Campus Streets, Cedar Falls, IA 50613, USA. e-mail: eezp@bu.edu

transfer and define it as the ‘incorporation of a grammatical property into one language from another’ (1996: 3). Döpke describes crosslinguistic influence as ‘unusual acquisition structures’ (2000: 209) uniquely seen in the language of bilingual children. This research focuses on whether the language development of simultaneous bilinguals differs from that of monolinguals due to interactions between the child’s two developing languages. The majority of studies to date consider evidence from two Indo-European languages (French-German: Meisel, 1994; French-English: Genesee, Nicoladis & Paradis, 1995, Paradis & Genesee, 1996; French-Dutch: Hulk & van der Linden, 1996; English-German: Döpke, 1997, 2000; Dutch-French and German-Italian: Hulk & Müller, 2000; Catalan-English: Juan-Garau & Pérez-Vidal, 2000; Italian-French: Müller & Hulk, 2001; English-Spanish: Paradis & Navarro, 2003). The present report presents evidence on subject omission rates in the language of young Inuktitut-English bilingual children. The findings contribute to the literature on crosslinguistic influence because the two languages under investigation are from different language families and have radically different language typologies: English from the Indo-European family and Inuktitut from the Eskimo-Aleut family.

Recent work in bilingual crosslinguistic influence displays divergent results. Among those reporting no evidence for crosslinguistic influence are Paradis & Genesee (1996) who examined finite verbs and weak and strong pronouns in French-English bilingual children and Meisel (1994) who examined the acquisition of various aspects of functional categories in French-German bilingual children. Both studies found that bilingual children exhibited monolingual-like acquisition patterns and possessed structural competency similar to that of monolinguals.

Others have found evidence for crosslinguistic interactions in the grammars of bilingual children and have attributed these interactions to specific language-internal or language-external factors. Döpke (1997, 2000) reports that Australian children learning English and German simultaneously overgeneralized the V–O order of English to German. German instantiates both V–O and O–V word orders, depending on the complexity of the utterance. Working within the competition model of language acquisition (Bates & MacWhinney, 1989), Döpke argues that the children were prone to overgeneralize the V–O word order in their German because this order was reinforced in both German and English simple sentences that they often hear. Hulk & Müller (2000), working in a generative framework, report that Dutch-French and German-Italian bilingual children show crosslinguistic influence in the domain of object drop, but not root infinitives. More specifically, using spontaneous data from two bilingual children, one Dutch-French and one German-Italian, they found that the children omitted more objects in French and Italian

than is typical for French or Italian monolingual children, influenced by the higher rates of object omission typical of monolingual German and Dutch. They argue that crosslinguistic influence is prone to occur when two conditions are met: (1) there is an interface between two modules of grammar (such as pragmatics and syntax), and (2) the two languages overlap in structure at the surface level. In one of the only studies on children acquiring typologically distinct languages, Yip & Matthews (2000) report that transfer occurred from Cantonese to English (but not from English to Cantonese) in a bilingual Cantonese-English child (1;5-3;6) in several structures that contrast syntactically in the two languages: WH-in-situ interrogatives, null subjects, and pronominal reflexives. They propose that language dominance was the principal determinant of language transfer insofar as the child was Cantonese-dominant as determined by his MLU.

Several additional studies on crosslinguistic influence have examined subject realization, the focus of the present investigation, in bilingual children. Juan-Garau & Pérez-Vidal (2000) examined subject realization in a bilingual child learning Catalan and English, two languages that contrast in how subjects must be realized. Catalan is a pro-drop language whereas English typically requires overt subjects. This child produced subjects 'much in the same proportions as his peers in both languages' (2000: 188): he produced a higher rate of null subjects in Catalan than in English, and both rates mirrored those of monolingual children in each respective language. In a case-study of an English-Italian bilingual child (1;10-3;1), Serratrice (2001, 2002) also found that the child demonstrated language-specific sensitivity to the differing syntactic properties of subjects in his two languages.

Paradis & Navarro (2003) examined subject realization in a bilingual Spanish-English child (1;9-2;6) and her parents, focusing on both frequency of overt versus omitted subjects and the discourse-pragmatic contexts in which each type of subject appeared. This child used more overt subjects in Spanish than is typical for monolinguals, revealing possible crosslinguistic effects from English to Spanish. Paradis & Navarro suggest, however, that this influence could be attributed to the specific variety of Spanish spoken by the parents (one parent is a non-native speaker who used more overt subjects than is typical for monolinguals), to language-internal factors, or both factors operating together. Serratrice (2005) has examined more closely the possible effects of discourse pragmatics in the choice of potential syntactically grammatical structures and suggested an extension to Hulk & Müller's (2000) hypothesis. She proposed that in later acquisition stages, after the instantiation of the C system, crosslinguistic influence may occur in bilinguals in specific contexts where syntax and pragmatics interact. English-Italian bilinguals (6;11-8;4) given a picture verification task accepted overt pronominal subjects as co-referential with the subject

more often than monolinguals Italian speakers of the same age. Serratrice, Sorace & Paoli's (2004) study of one Italian-English bilingual child (1;10-4;6) showed no evidence for early crosslinguistic influence between the two languages, but in later stages the child produced pragmatically inappropriate pronominal subjects in contexts where the monolingual controls used null subjects.

In the present study, we further explored bilingual crosslinguistic influences with respect to the suppliance/omission of subjects. In contrast to the children examined by Juan-Garau & Perez-Vidal (2000) and Paradis & Navarro (2003), the children we examined are acquiring two typologically different languages with respect to the realization of subjects, Inuktitut and English. Inuktitut is a member of the Eskimo-Aleut family and English of the Indo-European family. In addition, we report results for six children rather than just one or two, as has been typical of research on crosslinguistic influences to date. This permits us to examine trends for a group of children as well as for individual children. Subject use in bilingual children acquiring Inuktitut (pro-drop) and English (non-pro-drop) is particularly interesting because this language pair fits Hulk & Müller's (2000) criteria for crosslinguistic influences to occur and, thus, provides an additional test case of their hypotheses. Specifically, (1) subject omission in English and Inuktitut is determined by both syntax and pragmatics, and (2) one language (Inuktitut) provides evidence for the null subject option that appears to be allowed in the other language (English), although it is highly restricted. If crosslinguistic influence occurs, we predict that exposure to Inuktitut, which licenses pro-drop, will significantly increase the initial rate of pro-drop in English in the bilingual Inuktitut-English children.

#### *Typological features of English and Inuktitut*

English is a member of the Indo-European language family. It exhibits basic SVO word order and is a morphologically analytic (isolating) language, and one word generally contains one or two morphemes. English requires overt sentential subjects in tensed clauses, allowing subject omission only in certain instances of colloquial usage and in the imperative. Word order in English is typically SVO in declaratives, and in interrogatives the subject and verb may be inverted, placing the subject in second position following the verb. English subjects in the first and second person (singular and plural) may only be represented by pronouns. Third person (singular and plural) subjects may be represented by a lexical (full noun), pronominal or demonstrative subject.

Inuktitut is a member of the Eskimo-Aleut language family and has basic SOV word order. A polysynthetic (or incorporating) language,

Inuktitut has a rich inflectional system, with typical words containing between two and ten morphemes. In Inuktitut, subjects are most often not represented as independent lexical items, but through verbal inflections that indicate person and number. Typical word order in Inuktitut is SOV, but subjects and objects are more commonly omitted than realized overtly, leaving the verb in sentence initial position. In fact, subjects in first and second person can never be realized apart from the verbal inflection; although there are first and second person pronoun forms in Inuktitut, they cannot appear in argument position. Subjects in third person (singular, dual, and plural) may be realized in lexical (full noun phrase) or demonstrative form in addition to the verbal inflection.

*Monolingual English and Inuktitut child language*

Research has shown that monolingual English-speaking children produce utterances with missing subjects before the age of 4;0, with rates of omission varying from 26 to 55% at the earliest stages and gradually declining to rates varying from 5 to 11% (Bloom, 1990; Valian, 1991; Wang, Lillo-Martin, Best & Levitt, 1992). In a study of four monolingual children acquiring Inuktitut (2;0–3;6), Allen & Schröder (2003) found that they produced 85% null subjects in spontaneous speech. The children's suppliance or omission of a sentential subject appeared not to be random, but reflected contextual factors. More specifically, they tended to produce more overt subjects in contexts where the person or object they were referring to was not physically present or in the discourse, indicating that they were aware of the interlocutor's need for more specific information or knowledge. For younger Inuktitut-speaking children in the two-morpheme stage, Crago & Allen (1998) found that when children use a verb as one of their morphemes, the other is virtually always an inflectional morpheme and not a lexical or demonstrative subject. Thus, the subject omission rate is virtually 100% in early stages of development, decreasing to about 85% by the time the MLU is higher than 2.0.

In the present study, subject omission rates should be similar to monolinguals in each language if no crosslinguistic influence occurs between English and Inuktitut. If subject omission rates and acquisition patterns of these children differ from those of monolinguals, however, then crosslinguistic influence is likely. Specifically, based on the findings of Döpke (1997, 2000) and Hulk & Müller (2000), we expected that the children would omit more subjects in English than their monolingual counterparts, undergoing influence in one direction from the language that fully supports both options for subjects (Inuktitut) to the language that only supports one of the options (English).

## METHOD

*The children*

Six bilingual (Inuktitut-English) children aged 1;8 through 3;9 took part in this study: three girls (AW, PN, SA) and three boys (AI, SR, MT). The families of five of the children included two bilingual Inuit parents who spoke both Inuktitut and English at home since the birth of the target child. These children and their families live in Inuit settlements in northern Canada with populations ranging from 1000 to 3000 inhabitants. Approximately one-fourth of the population of these settlements is not of Inuit origin and does not speak Inuktitut. Inuktitut, English, and French are all used daily in the community according to the particular situation and the preferences of the speakers involved. Most typically, English is used for politics and business, whereas Inuktitut is the language of the home, hunting, and in traditional or cultural settings (Taylor & Wright, 1990; Dorais, 1996). The sixth subject, MT, has a bilingual mother and an English-speaking father. He lives in a smaller settlement of about 250 people where about 5% of the population is not of Inuit origin and does not speak Inuktitut. Inuktitut is the language of daily life, although the majority of inhabitants are bilingual in English and/or French and use these languages when required.

*Data collection*

The children were videotaped at home during typical communication situations, such as play and daily family interactions. Present at the taping sessions were the target child, at least one parent, and sometimes other family members or visitors. The researchers taping the sessions made no attempt to guide the topics of conversation or the language used. Each child was recorded between 4 and 6 times for two hours at each session, over a one-year period.

All recordings were then transcribed in CHAT format (MacWhinney & Snow, 1990) by native speakers of English and Inuktitut working in tandem. Each utterance was coded for language: all English, all Inuktitut, or mixed. For purposes of this study, we consider only the all-English and all-Inuktitut utterances. Data analyses were carried out using CLAN programs (MacWhinney, 1991). Table 1 summarizes each child's use of English only, Inuktitut only, and mixed utterances. Approximately 47.5% of the corpus consists of utterances solely in English and 45.8% solely in Inuktitut. The remaining 6.6% were mixed. Though the aggregated figures are well balanced, there are individual differences between the children in the percentage of output in English, Inuktitut and mixed. Partially intelligible and unintelligible utterances were not included in the analyses, nor were utterances that were routine in nature (such as when a child was

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TABLE I. *Utterance types by child*

Child	Age	# of Total utterances	% English only	% Inuktitut only	% Mix
AW	1;8-2;6	1771	18.3	80.6	1.1
SR	2;0-2;10	1206	84.2	11.2	4.6
SA	2;5-3;2	1572	45.0	50.9	4.1
MT	2;5-3;3	436	13.9	69.4	16.7
PN	2;8-3;5	946	76.2	20.3	3.5
AI	2;11-3;9	2586	47.6	42.6	9.8
Total	1;8-3;9	8517	47.5	45.8	6.6

singing a song), self-repetitions, and imitations of adult utterances by the target child.

*English coding*

The English-only utterances were coded as to whether or not a subject would be required in adult speech. Further, all overt and omitted subjects were coded for form (i.e., lexical, pronominal, demonstrative, WH-word ['who' questions], or null), person (1st, 2nd, 3rd), and number (singular or plural). (1)-(4) are examples of the four forms of overt subjects in English:

- (1) Lexical subject: *Um Steve want that one?* (PN 3;5)
- (2) Pronoun subject: *I can do it.* (SA 2;7)
- (3) Demonstrative subject: *This is big.* (AI 3;8)
- (4) WH-word subject: *Who washed this?* (SR 2;10)

Although English requires that subjects be overt in most cases, it does permit some omissions. Imperative forms and certain colloquial structures allow for omitted subjects. Acceptable subject-omitted structures from the corpus fell into the following four categories and were coded as 'subject not required' (examples shown in bold):

- (5) Imperative structures:
  - a. child: **Catch it.** (MT 3;3)  
(situation: The child threw a toy on the bed.)
  - b. mother: *Nauli?*  
nauk-li  
where-and  
'Where?!'
  - mother: *Hmmm?*
  - child: **Look.** (SR 2;10)

- (6) Progressive participle structures:
- a. father: *Ukua sujui?*  
 ukua su-jut  
 those.ones do.what-PAR.3pS  
 ‘What are those ones doing?’  
 child: ***Digging.*** (AI 3;0)
- b. aunt: *Suju ukua?*  
 su-jut ukua  
 do.what-PAR.3pS those.ones  
 ‘What are those ones doing?’  
 child: ***Singing.*** (AI 3;3)
- (7) ‘Wanna’ questions with implied second person:
- a. mother: *Shoot it.*  
 child: **<Want> [?] me shoot?** (SR 2;1)  
 mother: *Yeah.*
- b. child: ***Wanna see me?*** (SA 3;2)  
 researcher: *Yes I see you.*
- (8) Implied first person declaratives in past tense:
- a. child: ***Found it.*** (SR 2;5)  
 child: *I found it.*
- b. uncle: *Atii go Sammy.*  
 atii  
 IACT.initiate  
 ‘Hey go Sammy.’  
 uncle: *Ooh ... Ah.*  
 child: ***Got it.*** (SR 2;2)  
 uncle: *You got it?*

The following are examples of two categories of subject omission that would be considered non-target forms, where a sentential subject is obligatory, but subject omission occurs. Such utterances were coded as ‘subject required’.

- (9) Subject omission with copula:
- a. child: *Look, airplane.*  
 father: *Qa.*  
 ‘Yes.’  
 child: *Uvagutitu.*  
 uvagut-titut  
 us-EQU.SG  
 ‘Like us.’

father: *Yeah.*

child: ***Is done is gone.*** (AI 3;9)

expected target form: It's done, it's gone.

- b. mother: *Kina too small, uvanga?*  
 kina too small uvanga  
 who I/me/mine  
 'Who is too small? Me?'

child: *Yeah.*

mother: *Kisumu? Ai?*  
 kisu-mut ai  
 why-ALL.SG huh  
 'Why is that? Huh?'

child: ***Is too small.*** (SA 2;9)

expected target form: It's too small/You're too small.

(10) Subject omission with main verb (non-imperative):

a. mother: *It's gonna fall.*

... [5 unrelated utterances]

mother: *Look put it up here.*

child: ***Fall.*** (SR 2;1)

expected target form: It's falling/It's gonna fall.

b. researcher: *It does look like a boat, the wheelbarrow.*

mother: *Yeah.*

researcher: *Has the shape of a boat uhuh.*

child: ***Left this as a boat in a boat.*** (AI 2;0)

expected target form: I left this as a boat in a boat.

*Inuktitut coding*

The Inuktitut-only utterances were coded for overt and absent verbal inflections that serve as indicators of person and number in the absence of an overt subject. The type of subject was coded (null, lexical, or demonstrative), as was person (1st, 2nd, 3rd), and number (singular, dual, or plural). Imperatives were not excluded from the analysis because they follow the same pattern with respect to subject realization as other verb modalities in Inuktitut.

The following are examples of verbal utterances in Inuktitut with overt subjects:

- (12) Lexical subject: *illu sukkutu* (AW 2;1)  
 illu sukkuq-juq  
 house be.broken-PAR.3sS  
 'The house is broken.'

- (13) Demonstrative subject: *una ahaatu* (SA 2;7)  
*una aahaq-juq*  
 this.one-ABS.SG hurt-PAR.3sS  
 'This hurts.'

(14a), (14b) and (14c) are examples of typical verbal utterances in Inuktitut with null subjects:

- (14) Null subjects:
- a. *qaiqu* (MT 3;3)  
*qai-guk*  
 give-IMP.2sS.3sO  
 'Give it to me.'
  - b. *paallartunga* (AI 3;8)  
*paallak-junga*  
 fall-PAR.1sS  
 'I fell.'
  - c. *pikani iqalulaujungngitugu* (AW 2;6)  
*pikani iqaluk-lauq-nngit-jugut*  
 there catch.fish-PAST-NEG-PAR.1pS  
 'We did not catch any fish there.'

## RESULTS

### *English*

In the English-only corpus, 1010 utterances contained verbs of which 427 would not require a subject in adult language and 583 would require subjects. The 427 instances of subject non-obligatory structures include imperatives (405 tokens) and colloquially acceptable structures (22 tokens), such as in (5)–(8). These data show a subject omission rate of 42%, including acceptable instances (imperatives and colloquially acceptable structures) as well as those where an overt subject is expected in adult language, such as in (9)–(11), but was not provided. Of the 583 subject-obligatory utterances, there were 31 where the children produced null subjects, resulting in a 5% rate of inappropriate subject omission. From this point on, we no longer include imperatives and colloquially acceptable structures in our discussion; only omitted subjects in subject-obligatory contexts are considered. See Table 2 for a breakdown of subject production in obligatory contexts.

In the 552 instances where a subject was required and produced overtly, the children produced one of four types of overt subjects: pronominal (385 tokens, 70%), demonstrative (92 tokens, 16%), lexical (48 tokens, 9%) or WH- (27 tokens, 5%). Of the 31 utterances coded as null in

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TABLE 2. *Overall frequency of subject-obligatory and subject non-obligatory utterances in English*

		# tokens	%
Subject not obligatory	imperatives	405	40
	colloquially not required	22	2
Subject obligatory	null	31	3
	overt	552	55
TOTAL		1010	100

subject-obligatory contexts, 7 were unclear as to person intended and, consequently, were not coded for person or number. Within the 24 utterances where subject referents were discernable from the context or discourse, third person was most prevalent (14 tokens), followed by first person (7 tokens), and second person (3 tokens). As for number, null subjects only occurred in singular contexts and never in plural contexts.

*Developmental patterns in English*

In this section, we consider the six children as a group from a developmental perspective; see Table 3. The data were broken down into five age groups, each representing a six-month period, ranging from 1;8 to 3;9. The data for each age group depend on the time of data collection in relation to the age of each child so that all age groups do not include all six children. For example, there are more data for SR in the younger age ranges as this child happened to be relatively young when data collection began, and there are more data for AI in the older age ranges as he was relatively old during data collection. In the first age group (1;8-2;0), there were few subject-obligatory utterances and the children produced no null subjects. Between 2;1 and 2;6, the number of verbal utterances requiring subjects increased sharply (ninefold) as did the omission rate - 23%. In the last three age groups, ranging from 2;7 to 3;9, the null subject rate decreased abruptly and then held steady at a relatively low percentage, below 7%.

Considering the children individually (see Table 4), SR, AI, and PN each produced approximately one-third of the subject-obligatory utterances in the corpus, while SA produced 6%. These four children all produced null subjects in English in subject-obligatory contexts. The data for AW and MT make up approximately 1% each of the total number of subject-obligatory utterances, and there were no instances of null subjects for these two children.

SR most closely resembled a monolingual English-speaking child in his use of null subjects. SR produced no verbs in his first session at 2;0 and

TABLE 3. *Null subject production in English in subject-obligatory utterances for six children combined*

Age	# Subject-obligatory utterances	# Non-target null subjects	%
1;8-2;0	9	0	0
2;1-2;6	81	19	23
2;7-3;0	241	7	3
3;1-3;6	194	1	< 1
3;7-3;9	58	4	7
	583	31	5

thus no subjects; this was followed by a 25% null subject rate in the subsequent sessions at age 2;1-2;6. He then displayed a decrease in null subjects for the remainder of the sessions, arriving at a rate of 3% in his last session at 2;10. Like a monolingual learner of English, this child went through an early stage with a relatively high rate of null subjects, followed by use of very few null subjects in obligatory contexts. The fact that SR's subject use so closely resembles that of a monolingual child may be linked to the fact that he was younger than the other children and is also the most English-dominant child in the study based on the percentage of utterances in English as seen in Table 1.

AI's subject production does not demonstrate the same characteristics as SR nor of a typical monolingual English child. This may be due to the fact that he was in a later stage of development. He is the most prolific child in the study as far as sheer number of utterances is concerned (30% of the corpus). It is possible that AI went through a null-subject stage in English at an earlier age, before data collection began; he was already 2;11 at the beginning of data collection, and his null subject rate remained more or less consistent across sessions.

SA and PN did not provide as much data as the two previous children, yet appear to have productive verb use in English. We may presume again that, like AI, SA and PN had already acquired English subjects. A possible question regarding the data may be that AI, SA and PN were too old and, therefore, their language development too far along to effectively observe the full developmental pattern of subject drop in English. More specifically, researchers generally agree that children acquiring English go through an early period when subjects are absent and they then begin to use them in obligatory contexts. These three children may have already passed the early stage when subjects are absent in English. The present data are limited in that there is not a long enough age range for all children to demonstrate this developmental pattern.

TABLE 4. *Null subject production in English of subject-obligatory utterances by age and child*

Age	AW	SR	SA	MT	PN	AI	Total
1;8-2;0	0% (0/9)	0% (0/0)	—	—	—	—	0%
2;1-2;6	0% (0/0)	25% (19/75)	0% (0/5)	0% (0/1)	—	—	23%
2;7-3;0	—	3% (3/104)	8% (2/26)	0% (0/6)	0% (0/31)	3% (2/74)	5%
3;1-3;6	—	—	0% (0/3)	0% (0/0)	<1% (1/146)	0% (0/45)	0%
3;7-3;9	—	—	—	—	—	7% (4/58)	7%

In the case of AW and MT, they may be somewhat delayed in their acquisition of English insofar as they produced fewer verb phrases in English at ages 2;6 and 3;6, respectively, than the other children. Both of these children had higher percentages of output in Inuktitut than in English (as seen in Table 1). It is not uncommon for bilingual children to be more advanced in one of their languages, largely as a result of reduced exposure to the other language (Genesee, Paradis & Crago, 2004). It would be interesting to observe AW and MT later in development to see if they go through similar acquisition stages for subjects as English monolinguals and as SR.

To summarize, SR, for whom we have data between the ages of 2;1 and 2;6 produced a relatively high percentage of null subjects (25%) between 1;8 and 2;6, and then dropped to 3% between 2;7 and 3;0. SR, SA, MT, PN, and AI, whose data cover the older age ranges (2;7-3;9) all produced low percentages of null subjects, between 0 and 8%. Thus, the data from the individual children support the aggregated results, showing higher percentages of null subjects in younger age groups and lower percentages of null subjects in older age groups.

### *Inuktitut*

In the Inuktitut-only corpus (see Table 5), there were 870 utterances with verbs of which 747 contained null subjects and 123 had overt subjects. Within the overt subject utterances, 68 were demonstratives and 55 were lexical. No pronominal subjects were present in the Inuktitut-only data; this is not a grammatical option in the language. The data show an overall subject omission rate of 86%.

Since pronominal subjects are not grammatical in Inuktitut, all first and second person verbal utterances had null subjects. Approximately half of the utterances in Inuktitut were in third person. The percentage of null subjects in the third person (72% singular, 86% plural) is slightly lower than first person because there are demonstrative and lexical subjects in some instances.

TABLE 5. *Null subject production in Inuktitut utterances by age for six children combined*

Age	# Verbal utterances	# Null subjects	%
1;8-2;0	88	87	99
2;1-2;6	203	171	84
2;7-3;0	190	155	82
3;1-3;6	281	238	85
3;7-3;9	108	96	89
	870	747	86

*Developmental patterns in Inuktitut*

In this section, the Inuktitut-only data of all six children are divided into five age groups, each representing a 6-month period, ranging from 1;8 to 3;9; see Table 6. Again, the data for each age group depend upon the time of data collection in relation to the age of each child, so all six children are not represented in every age group. The youngest age group (1;8-2;0) had a rate of null subjects of 99%. Starting in the second age group (2;1-2;6) and continuing through age 3;9, the null subject rate decreased slightly to between 82 and 89%.

When subject omission rates of each individual child are considered, we see that AW, SR, SA and MT, who had data in the three youngest age ranges exhibited nearly 100% null subjects. Although SR exhibited a high null subject rate in period 3, there was a general trend for null subjects rates to fall below 100% for the other children for whom there are data. For example, in the older age ranges, SA had rates of 81 and 91%, averaging 85%, and AI had omission rates between 67 and 89%, averaging 78%.

MT, AW, and PN behaved similarly to each other in their Inuktitut subject use. While the average null subject rate of these three children (92, 87, and 80%) is consistent with the monolingual Inuktitut rate, the children fluctuated in individual sessions between a null subject rate of 100% and lower. Each of these three children had at least two sessions when all verbal utterances contained null subjects. Thus, MT, AW, and PN appear to behave as monolingual Inuktitut-speaking children, on average, in their null subject production; but individual files suggest that these children are still in the process of acquiring Inuktitut subjects. This is perhaps an illustration of the two-morpheme stage of Crago & Allen (1998), in which acquirers of Inuktitut typically produce only a verb root and inflection before reaching the stage of development when independent subjects are produced.

SR appears to be the last of the six children to acquire subjects in Inuktitut. He is also the second youngest and most English-dominant child

SUBJECT OMISSION IN CHILD INUKTITUT AND ENGLISH

TABLE 6. *Null subject production in Inuktitut utterances by age for each child*

Age	AW	SR	SA	MT	PN	AI	Total
1;8-2;0	99% (87/88)	0% (0/0)	—	—	—	—	99%
2;1-2;6	79% (108/137)	100% (13/13)	93% (37/40)	100% (13/13)	—	—	84%
2;7-3;0	—	100% (4/4)	81% (60/74)	96% (44/46)	77% (23/30)	67% (24/36)	82%
3;1-3;6	—	—	91% (48/53)	80% (85/96)	100% (5/5)	79% (100/127)	85%
3;7-3;9	—	—	—	—	—	89% (96/108)	89%

in the study, and these factors could explain his results. When he began producing verbal utterances, he produced only utterances with null subjects. SR may be an example of the earliest stage of the acquisition of subjects in Inuktitut.

In sum, the six children tended to produce relatively high rates of null subjects early in development (often 100% of the time) and their rates of subject omission decreased as development progressed.

DISCUSSION

Our discussion focuses on comparisons between the bilingual children's subject omissions rates and those of monolingual English children. The rates of null subject utterances produced by our bilingual children correspond to rates that have been found in monolingual English acquisition studies. Valian (1991) report null subject rates of 31% in early stages of English language development (1;10-2;2), and Wang *et al.* report a rate of 26% at age 2. The rate of 23% we found for our Inuktitut-English children between 2;1 and 2:6 is similar to these findings. Valian and Wang *et al.* report a lower rate of null subjects in later stages of acquisition - 5% at age 2;7-2;8 and 9% at age 3-4. The rates of null subjects we found in the present study are similar, ranging from 3% to 7% at age 2;7 to 3;9. In both monolingual and bilingual studies, children produced more null subjects in English in the early stages and decreased their rates as their language developed. Our Inuktitut-English bilingual children displayed a more abrupt decrease in the percentage of null subjects in obligatory contexts (between 2;1-2;6 and 2;7-3;1) than has been reported in monolingual English learning children. It is possible that some overcorrection occurred in the children's suppliance of subjects in English, resulting in rates of utterances with null subjects in the lower end of the range in comparison to what one would expect from monolingual English children. They may be 'aware' that English has far

fewer null subjects than Inuktitut, leading them to overcompensate and produce almost none.

Turning now to Inuktitut, the average null subject rates exhibited by AI (81%), SA (87%), MT (92%), AW (87%), and PN (80%) are consistent with the 85% rate reported by Allen and Schröder (2003) for monolingual Inuktitut-speaking children. AI and SA appear to have the most monolingual-like subject use in Inuktitut, with rates of 81 and 87%, respectively, while also displaying productive use of overt subjects.

When the results of the six children are aggregated, it is possible to discern a general pattern in the acquisition of Inuktitut subjects. In the two youngest age groups (1;8 to 2;6), the children produced null subjects for all or nearly all verbal utterances. During the three subsequent age ranges (2;7 to 3;9), they used more overt subjects, with the result that the average rate of null subject production decreased to the level found in monolingual Inuktitut learners.

In conclusion, the present results provide no evidence for crosslinguistic influence from English to Inuktitut or Inuktitut to English in the domain of subject use despite the fact that these two languages are radically different. Inuktitut and English satisfy both Hulk & Müller's and Döpke's criteria for crosslinguistic influence, and yet none was found, suggesting that crosslinguistic influences are not universal. Whether or not they obtain may depend on which specific languages are paired, other grammatical properties of the languages, which grammatical structure is investigated, or language dominance. Clearly, more research is called for to establish the prevalence of crosslanguage transfer in bilingual acquisition and the factors that underlie it.

#### REFERENCES

- Allen, S. E. M. & Schröder, H. (2003). Preferred argument structure in early Inuktitut spontaneous speech data. In J. W. Du Bois, L. E. Kumpf & W. J. Ashby (eds), *Preferred argument structure: grammar as architecture for function*. Amsterdam: John Benjamins.
- Bates, E. & MacWhinney, B. (1989). Functionalism and the competition model. In B. MacWhinney & E. Bates (eds), *The crosslinguistic study of sentence processing*. Cambridge: CUP.
- Bloom, P. (1990). Subjectless sentences in child language. *Linguistic Inquiry* 21, 491–504.
- Crago, M. & Allen, S. E. M. (1998). Acquiring Inuktitut. In L. Leonard & O. Taylor (eds), *Language acquisition in North America: cross-cultural and cross-linguistic perspectives*. San Diego, CA: Singular Publishing.
- Döpke, S. (1997). Is the simultaneous acquisition of two languages in early childhood equal to acquiring each of two languages individually? In E. Clark (ed.), *Proceedings of the 28th Annual Child Language Research Forum*. Stanford Linguistic Forum 95–113.
- Döpke, S. (2000). Generation of and retraction from cross-linguistically motivated structures in bilingual first language acquisition. *Bilingualism: Language and Cognition* 3(3), 209–26.
- Dorais, L.-J. (1996). *Language in Inuit society*. Iqaluit, Canada: Nunavit Arctic College.
- Genesee, F., Nicoladis, E. & Paradis, J. (1995). Language differentiation in early bilingual development. *Journal of Child Language* 22(3), 611–31.

- Genesee, F., Paradis, J. & Crago, M. (2004). *Dual language development and disorders: a handbook on bilingualism and second language learning*. Baltimore, MD: Brookes Publishing.
- Hulk, A. & Müller, N. (2000). Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism: Language and Cognition* 3(3), 227–44.
- Hulk, A. C. J. & van der Linden, E. (1996). Language mixing in a French-Dutch bilingual child. In E. Kellerman, B. Weltens & T. Bongaerts (eds), *Eurosla 6. A selection of papers (special issue)*, pp. 89–103.
- Juan-Garau, M. & Pérez-Vidal, C. (2000). Subject realization in the syntactic development of a bilingual child. *Bilingualism: Language and Cognition* 3(3), 173–91.
- MacWhinney, B. (1991). *The CHILDES project: tools for analyzing talk*. Hillsdale, NJ: Erlbaum.
- MacWhinney, B. & Snow, C. (1990). The child language data exchange system: an update. *Journal of Child Language* 17, 457–72.
- Meisel, J. (1994). *Bilingual first language acquisition: French and German grammatical development*. Amsterdam: John Benjamins.
- Müller, N. & Hulk, A. (2001). Crosslinguistic influence in bilingual language acquisition: Italian and French as recipient languages. *Bilingualism: Language and Cognition* 4(1), 1–53.
- Paradis, J. & Genesee, F. (1996). Syntactic acquisition: autonomous or interdependent? *Studies in Second Language Acquisition* 18, 1–25.
- Paradis, J. & Navarro, S. (2003). Subject realization and crosslinguistic interference in the bilingual acquisition of Spanish and English: what is the role of input? *Journal of Child Language* 30, 371–93.
- Serratrice, L. (2001). The emergence of verbal morphology: an English-Italian case study. In J. Cenoz & F. Genesee (eds), *Trends in bilingual acquisition*. Amsterdam: John Benjamins.
- Serratrice, L. (2002). Overt subjects in English: evidence for the marking on person in an English-Italian bilingual child. *Journal of Child Language* 29, 327–55.
- Serratrice, L. (2005). Anaphora resolution in monolingual and bilingual language acquisition. In A. Brugos, M. R. Clark-Cotton & S. Ha (eds), *Proceedings of the 29th Annual Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press.
- Serratrice, L., Sorace, A. & Paoli, S. (2004). Crosslinguistic influence at the syntax–pragmatics interface: subjects and objects in English-Italian bilingual and monolingual acquisition. *Bilingualism: Language and Cognition* 7, 1–23.
- Taylor, D. & Wright, S. (1990). Language attitudes in a multilingual northern community. *Canadian Journal of Native Studies* 9, 85–119.
- Valian, V. (1991). Syntactic subjects in the early speech of American and Italian children. *Cognition* 40, 21–81.
- Wang, Q., Lillo-Martin, D., Best, C. T. & Levitt, A. (1992). Null subject versus null object: some evidence from the acquisition of Chinese and English. *Language Acquisition* 2, 221–54.
- Yip, V. & Matthews, S. (2000). Syntactic transfer in a Cantonese-English bilingual child. *Bilingualism: Language and Cognition* 3(3), 293–308.