The Contexts of Non-Affixal Verb Forms in Child Inuktitut

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1. Introduction

Recently, several studies explored the phenomenon of argument omission in the speech of children acquiring Inuktitut, a polysynthetic, highly inflectional language spoken in arctic Quebec, that allows subject and object omission (Allen 2000, Swift & Allen 2002a, Swift & Allen 2002b, Crago & Allen 2001, Skarabela & Allen 2002). It has been found that certain types of arguments, namely those representing third person referents, are omitted from children’s speech more often than in adults (Skarabela & Allen 2003). In addition, children are reported to omit obligatory inflectional suffixes required by the adult grammar (Swift & Allen 2002a, Crago & Allen 2001). Furthermore, it was found that children tend to omit arguments when they are involved in joint attention, a social activity wherein the child and the interlocutor are focused on the same referent while aware of each other’s attention (Skarabela & Allen 2002). In order to extend the previous findings, in the current study we explore the role of joint attention in the production of non-affixal verb forms. Since these can be viewed as the most extreme case of argument omission, we hypothesize that these non-adult-like forms will be produced in the presence of joint attention.

2. Previous studies

Children acquiring various languages omit arguments from their speech at a higher frequency than adults. Recently, several studies focused on argument omission and the acquisition of verbal inflection in child Inuktitut, a highly inflectional Eskimo language spoken in Northern Quebec. Crago and Allen (2001) explored the acquisition of finiteness in four normally developing children (1;11-2;1) and one child with SLI (5;0) in order to establish whether children acquiring Inuktitut go through an optional infinite (OI) stage or not. They found that normally developing Inuit children do not undergo an OI stage, a finding consistent with Wexler’s (1998) prediction that children acquiring null subject languages will not go through an OI stage. Crago and Allen (2001) report that the children fail to produce inflection only 6% of the time, which is considered mastery of the inflectional system (Wexler 1994).¹

Allen (2000) examined argument realization in child Inuktitut from the discourse-pragmatic perspective. She found that discourse-pragmatic features, such as presence or absence of a referent in the physical context or its discourse status, e.g. whether a referent is new or old in the discourse, have a strong effect on the form in which an argument appears: more informative arguments are more likely to be expressed by an overt argument and, conversely, less informative arguments are more likely to be expressed by an omitted argument. However, these findings failed to explain the instances of omitted arguments that are only discourse new and overt arguments that are only discourse given. To account for these contradictory examples, the role of joint attention was subsequently investigated (Skarabela & Allen 2002). It was found that omitted arguments of third person referents that are physically present in the context can be explained by the presence of joint attention, whereas overt arguments can be explained by the absence of joint attention.

However, a limitation of these studies is that they failed to analyze separately two different types of omitted arguments that occur in child Inuktitut: affixal verb forms illustrated in (1) and non-affixal verb forms illustrated in (2), that occasionally occur in child Inuktitut despite the lack of an optional infinitive stage²:

1 Interestingly, in their study of one child with SLI Crago and Allen (2001) found that, despite a non-existent OI stage in Inuktitut, the SLI child failed to inflect 40% of the verbs that require verb inflectional suffix, a rate significantly different from the normally developing language and age match.

² Inflection omission is acceptable in adult colloquial speech in four contexts (Swift and Allen 2002a; Swift and Allen 2002b, Crago and Allen 2001): (1) The verb stem ends in negative affix nngit. (2) Suggestion/order to consume food or drink. (3) Suggestion/order to play using the affix nnguaq. (4) Certain verb roots used to direct attention.

However, adults produce uninflected verbs only 0.3% of the time by comparison to significantly higher 6% of uninflected verbs produced by children. Most of these non-affixal forms are consistent with these four options, but a few are not and thus must be considered ungrammatical by the standard of the target language.
(1) **Affixal verb forms**

atjiliiq- jau- guma- nngit- tunga  
film- PASS- want- NEG- PAR.1sS

'I don't want to be filmed.'  (Elijah 2;4)

(2) **Non-affixal verb forms**

atjiliiq- jau- guma- nngit- 0  
film- PASS- want- NEG- 0

'(I) don't want to be filmed.'  (Elijah 2;4)

Recently, the non-affixal arguments in child Inuitutit were distinguished and investigated in another study which examined the role of discourse-pragmatic, structural, and emotive factors in their production (Swift and Allen 2002a). Yet, no single factor emerged that would account for these non-adult forms of arguments. Furthermore, since the non-affixal arguments carry less information about the referent than the affixal arguments, it seemed crucial to investigate the possible contribution of joint attention.

Therefore, to extend the findings of the previous studies, in the current study we examined the role of joint attention in a set of non-affixal arguments in the speech of four monolingual Inuitutit-speaking children (2;0-3;6). Since non-affixal verb forms could be viewed as the most extreme case of argument omission, we hypothesize that these non-adult forms will be produced as a result of children's sensitivity to the information structure of events. Specifically, we predict that the non-affixal verb forms will be produced in the presence of joint attention.

There is now a considerable body of literature that shows that during the second year of life children become quite active in gaining and maintaining joint attention, concurrent with the onset of language development. In early language, joint attention has been suggested to play an important role in the adult-child interactions for the identification of intended referents, and it has been demonstrated to provide a non-linguistic scaffolding for the young child's early linguistic interactions, as reported in research on vocabulary acquisition (e.g. Clark 2001, Baldwin 1993, 1995). However, only recently its influence has been explored in additional linguistic phenomena in child language, e.g. argument realization.

Unfortunately, the literature is obfuscated by an abundance of disparate and overlapping definitions for joint attention (see, e.g. Emery 2000). By comparison to dyadic interactions, such as following into or directing the interlocutor's attention as frequently associated with early vocabulary acquisition, joint attention in this study is to be understood as a more complex form of communication, which includes an additional component, the mutual awareness between the speaker and the interlocutor. Therefore, here we define joint attention as a triadic social activity wherein a child and an interlocutor are both focused on the same referent while aware of each other's attention (Tomasello 1999).  

3. **Methodology**

To assess what factors underlie production of non-affixal verb forms in child language and, specifically, whether non-affixal verb forms are produced in the presence of joint attention, we examined data previously collected by Allen (1996) from four monolingual Inuitutit-speaking children aged between 2;0 and 3;6. Each child was videotaped in naturalistic communication situations. Two hours of video footage per child at three 4-month intervals were selected and transcribed by native speakers in the CHAT format.

Out of the original data set of 3,168 verbal utterances, we selected only the verbs without cross-referencing inflectional affixes (i.e. non-affixal verb forms). This selection process yielded a total of 195 utterances. These 195 argument forms were divided according to the person of referent (1st & 2nd versus 3rd). Consequently, 3rd person referents were examined on videotapes and coded for joint attention.

3.1. **Relevant structural properties of Inuitutit**

Inuitutit is a polysynthetic, morphologically ergative language of the Eskimo-Alut family with SOV basic word order. It has rich inflectional morphology with nominal case-marking affixes and verbal cross-referencing affixes with frequent subject and object omission (Allen 2000). Each verb requires word-final inflection in the form of portmanteau suffixes. Each inflectional suffix encodes information about the verb mood and the person and number of the referent (i.e. a transitive verb suffix encodes information about the person and number of the subject and object, and an intransitive verb suffix encodes information about the person and number of the subject only). The following schema in (3) illustrates the verb formation process in the language (adapted from Swift and Allen 2002a):

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3 The following grammatical abbreviations are used in glosses:  
*Verbal affixes:* NEG = negation; PASS = passive; PRSP = prospective aspect.  
*Verbal inflection:* 1 = first person; 3 = third person; s = singular; S = subject; O = object; IND = indicative; PAR = participial.  
*Nominal inflection:* ALL = allative, PL = plural.

4 Tomasello (1999) refers to this type of joint attention as *joint attentional scenes*, "in which the child and the adult are jointly attending to some third thing, and to one another's attention to that third thing, for some reasonably extended length of time" (p. 97).
(3) verb base + postbase suffixes + portmanteau inflectional suffix
atjiliuq- jau- guma- ngit- tunga
film- PASS- want- NEG- PAR.1sS
‘I don’t want to be filmed.’

In the above example, the verb base atjiliuq, ‘film’, is followed by several optional postbase suffixes. However, each verb requires an obligatory inflectional suffix, such as -tunga representing a 1st person singular subject in the participial mood.

3.2. Verb forms: Affixal versus non-affixal forms

In this analysis, we distinguish two types of verb forms found in child Inupiaq: verbs with obligatory cross-referencing affixes (here termed affixal verb forms) and verbs without obligatory cross-referencing affixes (here termed non-affixal verb forms). The affixal verb forms, as illustrated in (1), consist of the verb base followed by a number of optional postbase suffixes and the final inflectional suffix. By comparison, the non-affixal verb forms illustrated in (2) consist of the verb base and optional suffixes, but no obligatory verbal inflection (see fn.2 for details on uninflected verbs in adult speech).

It is important to emphasize that, unlike the example (1) atjiliuqaugumangittunga, ‘I don’t want to be filmed’ with a 1st person inflectional suffix, the example (2) atjiliuqaugumangitiq, ‘don’t want to be filmed’ does not encode any linguistic information about the intended referent.

3.3. Person of referent

We also divided the data based on the person of the intended referent. Typological literature provides evidence that languages treat and encode 1st and 2nd person referents differently from 3rd person referents (see e.g. Aissen 1999). It is well-known in the literature on discourse-pragmatics that 1st and 2nd person forms provide unambiguous information about easily recoverable or accessible referents, i.e. speech participants ‘I’ and ‘you’ (e.g. Ingram 1978, Aissen 1999, see Ariel 2001 for discussion of accessibility). By comparison, 3rd person arguments are ambiguous, potentially providing an infinite number of referents. Therefore, to correctly indicate and identify a 3rd person referent is a substantially more complex task. Such a process requires more precise linguistic and/or contextual information in addition to sophisticated evaluation of the listener’s knowledge state.

3.4. Joint attention: JA-P(present) or JA-A(absent)

To code the video data for joint attention, we followed methodology introduced in Skarabala & Allen (2002). Joint attention is operationally defined as a triadic social activity wherein the child and the interlocutor are both focused on the same referent, while aware of each other’s attention. All selected non-affixal verb forms with 3rd person referents were examined on the video footage to record and code indicators of joint attention, such as eye gaze, body direction, and gesture (particularly, pointing). In addition, following Tomasello & Todd (1983), the length of the interaction between the child and the interlocutor was monitored to last a minimum of 3 seconds.

4. Results

4.1. Person distribution in affixal versus non-affixal verb forms

First, we divided the complete data set (N= 3,168) into two groups of affixal and non-affixal verb forms. This division yielded a total of 2,973 (94%) affixal verb forms and only 195 (6%) non-affixal verb forms. Subsequently, we were interested in assessing children’s sensitivity to discourse-pragmatics by examining the distribution of person type in these two types of verb forms.

Namely, we hypothesized that children would encode unambiguous 1st and 2nd person, i.e. speech participants, differently from potentially ambiguous 3rd person referents. Specifically, we predicted that non-affixal verb forms would be more likely to be produced with 1st and 2nd person referents. The data is summarized in the following Table 1:

Table 1. 1st & 2nd vs. 3rd person referents in affixal and non-affixal verb forms

<table>
<thead>
<tr>
<th>Verb form</th>
<th>1st &amp; 2nd person referents (N=1,762)</th>
<th>3rd person referents (N=1,406)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affixal</td>
<td>53% (1,593)</td>
<td>47% (1,380)</td>
</tr>
<tr>
<td>Non-affixal</td>
<td>87% (169)</td>
<td>13% (26)</td>
</tr>
</tbody>
</table>

Chi-square with Yates’ correction factors = 79.8, p<0.001

Table 1 shows the distribution of 1st and 2nd person referents by comparison to 3rd person referents in affixal and non-affixal verb forms. The total of 3,168 arguments consisted of 1,762 (56%) 1st and 2nd person referents and 1,406 (44%) 3rd person referents. However, when we compare the two types of verb forms (affixal versus non-affixal forms), we can see that the distribution of 1st and 2nd person referents and 3rd person referents is significantly different. The children produced 3rd person referents with 1,380 (47%) affixal verb forms by comparison to only 26 (13%) non-affixal verb forms.

5 Non-affixal verb forms with first and second person referents are considered instances of joint attention by default.
In other words, when children produced inflectional suffixes (i.e. the group of affixal verb forms), these nearly equally frequently occurred with both 1st and 2nd person referents (53%) and 3rd person referents (47%). However, when children failed to produce inflectional suffixes (i.e. the group of non-affixal verb forms), this happened significantly more frequently with 1st and 2nd person referents (87%) than with 3rd person referents (13%). This finding confirms our prediction that children are sensitive to the distinction in accessibility of speech participants and 3rd person referents, indicating a sophisticated awareness of the discourse-pragmatic context.

However, as the data shows, 26 (13%) of the 3rd person referents were produced without verbal inflection. This is unexpected. As stated previously, 3rd person referents are potentially infinitely ambiguous. What can account for the omission of these forms? Since the findings of previous research suggest that joint attention is one of the factors underlying argument omission, it seemed crucial to explore its role in the data of 3rd person non-affixal verb forms. Subsequently, we examined the video footage of the data set (N=26) for joint attention. The results are displayed in the following table 2, where JA-P signifies the presence of joint attention and JA-A signifies the absence of joint attention:

<table>
<thead>
<tr>
<th>Table 2: Joint attention in non-affixal verb forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention status</td>
</tr>
<tr>
<td>JA-A</td>
</tr>
<tr>
<td>JA-P</td>
</tr>
</tbody>
</table>

Out of the total of 195 non-affixal forms, we find that 169 (87%) examples, an overwhelming majority of all non-affixal utterances, referred to 1st and 2nd person referents. Since joint attention is defined as a social activity wherein the child and the interlocutor are focused on the same referent while aware of each other’s attention, we postulate that 1st and 2nd person referents, i.e. speech participants, are always considered to be produced in the presence of joint attention. However, this is not necessarily the case for 3rd person referents. Nonetheless, as we predicted, we find that out of a total of 26 non-affixal forms representing 3rd person referents, 23 (88%) were produced in the presence of joint attention, while 3 (12%) were produced in the absence of joint attention. A non-affixal 3rd person referent produced in the presence of joint attention is illustrated in the following example (4):

(4) Louisa is holding a light brown cap in her hand. She puts it on her head. Then she takes it off and throws it up on a shelf where she cannot reach it. As she is pointing to the cap up on the shelf, Louisa asks the person who is holding the camera to reach for the cap and give it back to her:

qai- jau- Ø
give- PASS- Ø
‘Give (it to me)’

(Louisa 3;1)

We can see that the camera is first focused on Louisa, then it follows the cap, after which it aims back at Louisa.

In this example, it is clear from the camera view that both Louisa and the interlocutor, the camera holder, are focused on the same referent, the cap, while aware of the other person’s attention—there is joint attention in progress.

However, as Table 2 shows, there were 3 examples with 3rd person non-affixal verb forms that were produced in the absence of joint attention. Two of these examples are a repetition of one utterance produced by Lizzie, illustrated in (5):

(5) Lizzie is sitting on the couch next to her mother. While her mother is sewing a tent, Lizzie is playing with a doll. They are talking. Lizzie at some point says to her mother:

uvatti- nut- uq- ngit- Ø
us- ALL.PL- arrive.at- NEG- Ø
‘(They’re) not coming to our house.’

(Lizzie 2;10)

Her mother fails to understand what Lizzie is referring to and asks for clarification. Lizzie repeats her utterance and when her mother fails to understand again, she starts crying.

The third problematic example that does not fit our prediction is described in (6) below:

(6) Paul is playing with his brother Michael. They are playing with a freezer. Michael is trying to close the door of the freezer, but does not succeed. He leaves the freezer and starts to play on the ground with a roll of toilet paper. Meanwhile, Paul attempts to close the freezer:

ukkuaq- Ø
close.door- Ø
‘Close.’

(Paul 2;10)
Paul’s brother Michael is not focused on the freezer or its door while Paul is producing this utterance. There is no joint attention in progress. Interestingly, Paul immediately corrects himself and produces the following utterance with the verbal suffix:

ukkuaq- si- vara
close.door- PRSP- IND.1sS.3sO
‘I’m going to close it.’ (Paul 2;10)

Examples (5) and (6) show the only verbs without inflection that were produced in the absence of joint attention. Example (5) describes an interaction between a mother and daughter, wherein the mother fails to understand what her daughter Lizzie refers to. Consequently, the mother requests a clarification statement. In response, Lizzie repeats the previous utterance and the referent remains unclear. The example (6), on the other hand, describes Paul’s interaction with his brother. First, Paul produces an uninflected verb, but corrects himself even without being asked for clarification.

To summarize the results reported in Table 2, joint attention was found to be highly predictive of the production of non-affixed verb forms with 3rd person referents (88% of the time). By definition, all 1st and 2nd person non-affixed verb forms were produced in the presence of joint attention. These results strengthen previous evidence that joint attention is a crucial factor underlying argument omission and that argument omission in child language as a syntactic phenomenon is significantly influenced by both discourse context and socio-pragmatic factors.

5. Conclusion and Discussion

In this study we focused on the socio-pragmatic contexts of non-affixed arguments. As evidenced by a low frequency of non-affixed verb forms in the data, only 6% of all the utterances, children are sensitive to the rules and structures of their native language from early on. However, we still find that children omit some of the syntactically obligatory inflectional suffixes. A close examination of these forms shows that their production is not random. Instead, this study suggests that non-affixed verb forms can be explained in terms of children’s sensitivity to the socio-pragmatic contexts in which these forms occur. As expected, children treat 1st and 2nd person referents differently from 3rd person referents in the group of non-affixed verb forms. Specifically, only 13% of the non-affixed verb forms were produced with 3rd person referents. Interestingly, we do not find a similar dichotomy in the frequency of these two referent types in the group of affixed verb forms. This seems to suggest that children are aware of the potential ambiguity of 3rd person referents. In order to avoid ambiguity and to make a referent more accessible, they tend to produce these referents with affixed verb forms or in the presence of joint attention.

This study indicates that certain syntactic behaviors in young children, such as omission of verb inflection, may be explained by socio-pragmatic factors. This study suggests that Preschool children have substantial awareness of their interlocutors’ knowledge state, demonstrating a very early understanding of the interpersonal and intentional nature of communicative patterns. In other words, from early on children understand that they have a choice of various words, forms, and structures to convey a particular message. However, children are able to assess the interlocutor’s attention as well as the knowledge state. This awareness limits the choice of form they entertain in order to convey their message successfully, including how to express the intended referent. Following Tomasello (1999), we argue that children are able to infer from the joint attention scene that the interlocutor will understand their utterance, even if they fail to produce the obligatory inflectional suffix.

References

Chicago Linguistic Society.