The acquisition of English functional categories by native speakers of Inuktitut

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Abstract

Several current studies in language acquisition have focussed on the emergence of functional categories in first and second languages. The properties of functional categories can be exhibited through movement, inflections, case marking and the use of functional elements such as determiners and complementizers.

This pilot study investigated the English second language of two groups of Inuktitut speaking schoolchildren at the beginning of the school year to see whether the properties of functional categories in English emerged in the same way as they do for first language speakers. While some of the Kindergarten children showed no access to these properties, others showed partial or complete access to them. Those children who had been in school one year demonstrated access to all of the properties under investigation. The results are discussed with respect to future research methodologies and studies of acquisition.

Resumé

Plusieurs études récentes se sont penchées sur le développement des categories fonctionnelles au cours de l'acquisition des langues premières et secondes. Les caractéristiques des catégories fonctionnelles peuvent être démontrées par mouvement, par inflections et par l'utilisation des éléments fonctionnels tel que les déterminants et les compléments.

Cette étude pilote faite au début de l'année scolaire, parmi deux groupes d'enfants parlant Inuktitut, a servi à examiner l'acquisition de l'Anglais comme langue seconde afin d'établir si les caractéristiques se développent de la même façon que pour la langue première. Certains enfants de classe maternelle ne se sont pas servis de ces caractéristiques tandis que d'autres les ont utilisées partiellement ou de façon régulière. Les enfants de première année se sont servis de toutes les caractéristiques étudiées. Ces resultats sont discutés au niveau de la méthodologie et les études d'acquisition.

Acknowledgements

Table of Contents

Bibliography

Appendix I
       Bilingual Syntax Measure Elicitation Materials

Appendix II
       Subject-Auxiliary Inversion Task

Appendix III
       Subject-Auxiliary Inversion Task (Inuktitut version)

Section 1 Introduction

Most current linguistic theories, and theories of language acquisition in particular, assume that a child brings a certain amount of innate linguistic knowledge with her to the learning task. This innate linguistic knowledge, Universal Grammar, (UG) consists of principles which constrain the formation of grammars, to allow only those which naturally occur in human languages (Chomsky, 1980). Languages, however, differ in many respects and although the principles of UG apply to all of them, there are significant differences in how and when they apply, depending on the characteristics of each individual language. Certain properties are therefore considered to be parameterized, with values that are determined language-specifically.

Despite UG, children do not immediately emerge with adult-like language. Early child speech is often lacking a number of features and structures which appear to emerge only after some time. Theories of language acquisition must account for how linguistic elements which are not present or active in the early stages of linguistic knowledge develop or become 'activated' in the appropriate contexts. Studies of language acquisition conducted within the framework of UG investigate how these properties are accessed and how language-specific parameter values are determined based on the input received by learners. They also attempt to determine what the 'starting point' or 'initial state' is for language learners. In many ways the same questions apply to learners of a second language. Learners of a second language (L2), who have presumably already started an input-driven process of determining the correct properties of their first language, lack the ability to produce native-like speech in the initial stages of their second language. Studies of second language acquisition focus on how individuals 'learn' the properties and values of a new linguistic system and what the 'initial state' of their learning grammar is. For example, one could ask if they still have direct access to UG or if they adopt the values of their first language (L1) until input 'informs' them otherwise.

In this thesis I investigate the acquisition of one set of grammatical elements, the functional categories, in the second language of child learners. My aim was to see if the properties of functional categories were present from the earliest stages of second language learning or if they developed in a manner similar to first language learning.

I focus on the acquisition of English, as a number of studies have addressed the emergence of functional categories in (first language) English and this serves as a comparative base. The first language, Inuktitut, is grammatically significantly different from English. Investigating the second language acquisition of a grammatical system very dissimilar to the first language can offer further insight into the acquisition process. While this study will contribute to research on language acquisition and second language learning in the field of linguistics I hope it will also add to the knowledge base available to teachers and clinicians in mixed linguistic communities in the North to evaluate the linguistic development of their students.

The thesis is organized in the following way: first I shall outline the basic properties of functional categories based on a framework of Government and Binding theory (as developed in Chomsky, 1981, 1986) and discussed extensively in current linguistic literature (e.g. Abney, 1986, 1987; Fukui & Speas,1986; Pollock,1989; Speas,1990; etc) and present evidence showing how the properties of functional categories manifest themselves in English. Following that will be a brief discussion of the structure of Inuktitut and how properties of functional categories are exhibited in that language. I shall then present different proposals put forward in the literature regarding the acquisition of those features in English. Issues of second language acquisition which are relevant to these properties will then be addressed. Finally, I will present data on the second language acquisition of English by native speakers of Inuktitut and discuss the results.

Section 2   The Syntax of Functional Categories

2.1 Functional Categories

This thesis adopts a framework based on current syntactic theory, namely Chomsky's Government and Binding (GB) Theory (Chomsky 1981, 1986). GB is an attempt to represent the system of grammar with subtheories of binding, government, theta roles, case assignment and so on. Syntax includes, besides properties of structure and movement, a categorial component defining the properties of sentential and phrasal elements. The constituents of sentences and phrases can be split into different categories depending on the roles that they play. Members of one such class of phrasal elements fall into the lexical categories of Nouns, Verbs, Adjectives and Prepositions (N, V, A, P). These categories are lexically defined in terms of the features [+/-N] [+/-V] where Nouns are [+N,-V], Verbs [-N,+V], Adjectives [+N,+V] and Prepositions [-N,-V] (Chomsky, 1986:2). Examples of lexical category items are;

Nouns: lizard, man, hat
Verbs: run, see, wear
Adjectives: old, happy, red
Prepositions: on, in, by

There is another class of elements which, despite sharing certain properties that can be represented in syntactic generalizations such as X-bar theory, is crucially different from the set of lexical categories. The functional categories are made up of 'closed-class elements' like inflections or affixes, determiners, and complementizers (INFL, DET, COMP). Features such as [+/-N] or [+/-V] do not appear as part of their lexical entry, rather they contain features such as Tense or Agreement.

Examples of (English) functional category items are;

Inflections: infinitival 'to', (past tense affix) -ed
Determiners: the, this, a
Complementizers: that, whether

Lexical and functional categories differ in their relation to other components of the grammatical system. This is partly due to their lexical properties. For example, lexical

categories can have a theta grid as part of their lexical entry. The features [+/- N], [+/-V] determine what kinds of arguments or complements they can take. Some lexical categories can assign theta roles (V, P) while some can receive them (N). Functional categories, on the other hand, help mark relations of possession, time and mode of an action, or how a phrasal complement is to be interpreted, e.g. as a question or subordinate (Abney,1986:4). By virtue of their make-up, lexical elements must always be present at D-structure. Functional elements may be phonetically null until such mechanisms as case assignment or affix movement make their properties visible.

2.1.1 Structural projections

Within X-bar theory the head of a phrase, X, may take complements depending on its lexical properties.[1] There may also be a pre-head position which is filled by a Specifier. This is shown below, where X is the head, YP a complement and Spec the Specifier position.

X' = X YP...
X" = Spec X'

Schematically, the projected structure can be illustrated as below.

Figure 1

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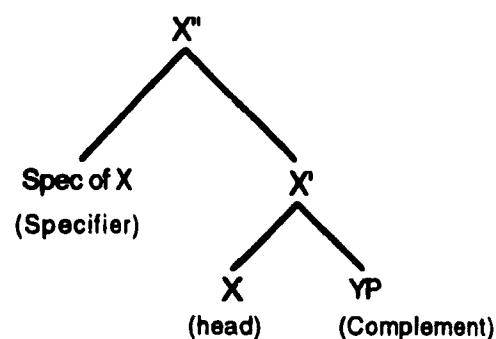
[1] In these examples the head is located on the left of the phrase, as it occurs in English, however this can vary across languages.

Both lexical and functional categories can be phrasal heads (X), take complements (YP) to form phrases (X') and project a Specifier position (to form X") but there are differences in the properties of their phrasal projections. Lexical and functional categories also differ with respect to their relations with other components of the grammatical system such as theta theory or case assignment.

Lexical heads like N project to NP (or N'), V to VP, P to PP and A to AP. Functional heads I(nfl) project to IP, D(et) to DP and C(omp) to CP. Lexical heads subcategorize for arguments according to their individual properties. The functional elements are more restricted in their complement choice and subcategorize VP, NP and IP respectively. Each of the phrases can have its own Specifier position in an expanded X" projection.

Characteristics of phrasal projections differ depending on the head type (functional or lexical). Some of these differences are outlined in point form below.

• Lexical heads can have more than one complement. Functional heads may have only one and it does not have to be an argument (Abney,1986:4).

• Functional heads can project only one Specifier position. Lexical heads may have more than one, so long as they are properly licensed, or none.

• Lexical category heads can iterate. Functional heads cannot.
For example, the iterated Adjectival Phrase in (1) would be permissible, while the iterated DP projection in (2) is ungrammatical.

1) the very very slippery lizard
2) *the the slippery lizard

Functional categories are involved in movement by providing landing sites for moved elements. The landing sites are the functional head position or the Specifier position

projected by the functional head. Moved elements may pick up features, such as inflections, from the functional categories. For example, all NPs are required by the Case Filter to have case. Subject NPs move to the Spec,IP position to acquire case and be licensed at S-structure.

In the next section I shall discuss how the features of functional categories are realized in English.

2.2 Functional Projections in English

In this section the properties of functional categories in English shall be discussed by looking at Noun and Verb movement, inflections, word order and so on. Although English has a relatively minimal inflection system, some evidence is available from third person and past tense inflections and some case inflection on nominals and/or pronominals. As mentioned earlier, functional heads can be realized as determiners or complementizers which are seen in the head position of their projections and which take complements. Other functional heads are realized as inflections or affixes, once their Kase features, the functional elements involved in case assignment or Wh-indexing, are discharged.

Speas (1990) has argued that restrictions on movement occur because functional heads can only project a Specifier position if they have Kase features to assign. (Kase features is the term she uses for the inventory of functional head features such as agreement (AGR) or tense (TNS).) In other words, only if the features are assigned can movement into Specifier positions be licensed because otherwise the Spec position will not be projected (Speas,1990:112). The following chart summarizes properties of functional heads in English with respect to features that can be assigned.

	DP	IP	CP
Kase assigner	AGR (-'s)	TNS/AGR	[+WH]
Non-Kase assigner	the,a,...	to	that...

(Speas,1990:110)

Kase features in English are assigned in the same way across categories. Speas gives the following generalization "Kase Features (=Case+WH Feature) in English are assigned and licensed under adjacency, in a direction specified by the particular head: rightward for V,P; leftward for COMP, DET, INFL " (1990:112).

This is shown structurally in Figure 2 below.

Figure 2

(from Speas, 1990:113)
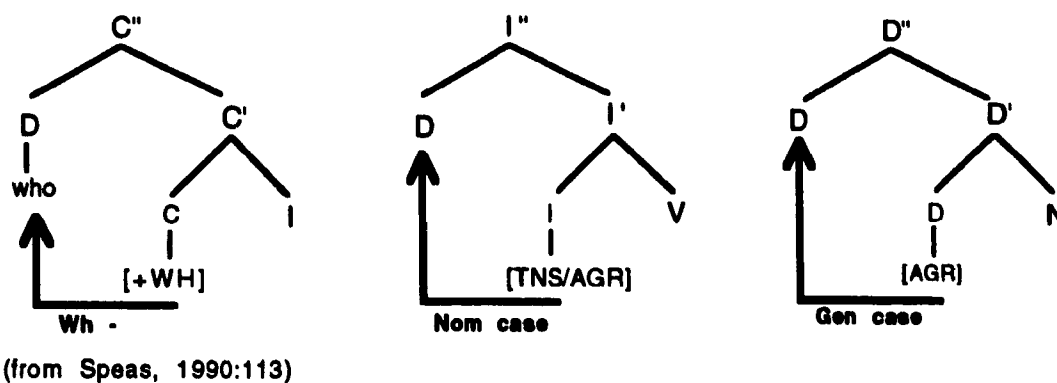
Given these shared properties across projections, the discussion below focuses on features of the different functional phrases, Inflectional Phrase, Determiner Phrase and Complementizer Phrase in English.

2.2.1 Inflection Phrase (IP)

The Inflectional Phrase, IP, is the minimal sentential structure of English. The I selects a VP as its complement and the Specifier position provides a landing site for the sentential subject. If the Inflectional Phrase is finite it contains Tense and Agreement features. If inflectional features are present they must be realized. Verb movement is one means by which the verb 'picks up' those affixes. In some languages, such as English, there are restrictions on what verbs can move. When verbs are prevented from moving, the Affixes themselves must move, called 'Affix-movement' or 'Affix-hopping' (Chomsky, 1986). In that situation, the affixes themselves move to the verb site which is within the VP to create the inflected Verb (V+I) complex. In English, the only visible main verb inflection in the present tense is the third person singular morpheme '-s'. Past tense inflections are visible for all persons.

Once the Inflection features have been assigned, then movement of the NP to get nominative case is licensed. The Subject NP moves to the Spec of Infl position to receive the appropriate features. In the example below, inflection lowers to the verb, and the

Subject 'Alice' can move to receive nominative case and be appropriately licensed according to the Case Filter.

Figure 3
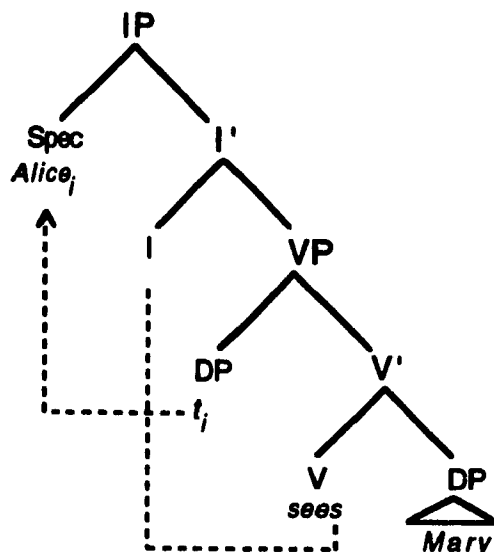
I am assuming here that there are VP-internal subjects. Under this analysis (Sportiche,2988; Koopman & Sportiche,1988), the subject NP of the phrase originates within the VP where it is a sister to the V'. Language-specific rules either allow the subject to remain in that position and receive case or force it to move to acquire case. In English the subject NP is required to move to acquire (nominative) case.

Some languages have very strong lexical restrictions on which verbs are allowed to move out of the VP. In his comparison of English and French verb movement Pollock (1989) suggests that theta-theory is responsible for restrictions on English Verb movement. Only those verbs which do not assign theta roles may be permitted to move. In English, those verbs are the auxiliaries 'have' and 'be'. These verbs are permitted to move to the Infl node and pick up the appropriate features at that position.[2]

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[2] Pollock (1989) and Chomsky (1989) suggest a sentential structure in which Infl is split into separate nodes, each accommodating specific features. In the split-Infl structure the AGR (Agreement) node and the TNS (Tense) node are split and Neg (Negation) occurs between them. The behaviour of modals supports this analysis. Following Chomsky's early work, Pollock assumes that modals are generated under the Tense node. Modals (such

Evidence for the movement of auxiliaries can be seen in the placement of negation. Assuming that the negative particle is base-generated in a position above the VP, auxiliary movement out of the VP into I is visible, when the negative particle `not´ is present, as shown in examples (1) and (2) below.

1a) He [IP [I e] [not [VP be working]]]   Deep Structure
 b) He [IP [I is] [not [VP -- working]]]   Surface Structure

2a) He [IP [I e] [not [VP have finished]]]   Deep Structure
 b) He [IP [I has] [not [VP -- finished]]]   Surface Structure
(examples based on Radford,1990:405,406)

Auxiliary movement and the positioning of negation elements demonstrates how the functional phrasal projection provides landing sites as well as the appropriate inflection forms. If the auxiliaries are not used then the inflectional features must descend to the verb to form the V+I complex. When modals are present they fill the head of Infl and movement of the auxiliary cannot take place, as in the examples below. The position of the negation in examples (5) and (6) shows the auxiliary remains within the VP.

3) He [IP [I may] [VP have finished]]
4) He [IP [I may] [VP be finished]]

5) He [IP [I will] [not [VP have finished]]]
6) He [IP [I will] [not [VP be finished]]]

The behaviour of the verb 'do' also gives further support for the proposed structure of the I projection. The verb 'do' has the distinctive characteristic of being able to function as a 'substitute' for the main verb in a phrase such as "I don't know the answer but Peter does" (Pollock, 1989:399). But 'do' can also act like an auxiliary and as such it acquires inflectional features and leaves the main verb uninflected. Negatives require that 'do' be inserted, as in examples (7) and (8).

7) John does not go   *John not goes
8) John did not go   *John not went

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as 'can', 'could', 'shall', 'may', 'will' and so on) are inflectionally uniform, showing no person or number agreement, suggesting they do not pass through the AGR node.

The positioning of the 'do' auxiliary is the same as for 'have' and 'be'. The properties of 'do' insertion are further indications of the structure of the Inflectional Phrase.

In summary, the properties of the Inflectional Phrase in English are seen by verbal affixes on the main verb and by the position of (inflected) auxiliaries 'have', 'be' and 'do'. The use of modals and the placement of negatives in relation to these and the main verbs shows the different structural positions in the IP. Next we shall turn to some properties of the Determiner Phrase in English.

2.2.2 Determiner Phrase (DP)

In Abney's (1986,1987) work on the English noun phrase, he shows how noun phrases have sentential-like properties by drawing a parallel between the sentential IP structure and the nominal phrase structure he calls DP. Under his DP analysis he showed the maximal projection of an NP is in fact the DP, with the functional Determiner head projecting a DP phrase and taking a NP as its complement. He argued that Spec of DP was much like Spec of Infl and movement of a lexical NP into the Specifier position was licensed by features contained within the functional head in exactly the same way as in the sentential phrase. Determiners, such as 'the', 'a', 'this', and 'that' are all functional heads and their presence in a phrase provides evidence of a functional category projection. Determiners cannot iterate and can only take one complement. Examples (9) through (13) demonstrate this.

9) the book
10) a book
11) *the the book
12) * the a book
13) * the John book

Determiners such as those mentioned above are not the only type of element which can fill the head of a DP projection. The Determiner functional category shares a property with the other functional categories of assigning Kase features, if the appropriate functional

element is present. The head may be phonetically null at D-structure but its features are realized on a NP at S-structure. The Determiner head can assign the genitive case, in the form of the possessive morpheme '-'s', to an NP which moves into Spec,DP. In other words the head of the DP can either be filled by a lexical determiner ('a', 'the', etc) or by a Kase feature in AGR,Det (in parallel to Infl's AGR) which is realized on a NP (Abney, 1987:52). Or as Abney states, "the difference between possessed and non-possessed noun phrases is the presence or absence of AGR" (1987:52). If AGR is present in the DP head position, the NP must move to 'pick up' the feature, just as it does into Spec,Infl to pick up nominative case. The structures below show this distribution.

Figure 4

'the book'   'John's book'   * 'John's the book'
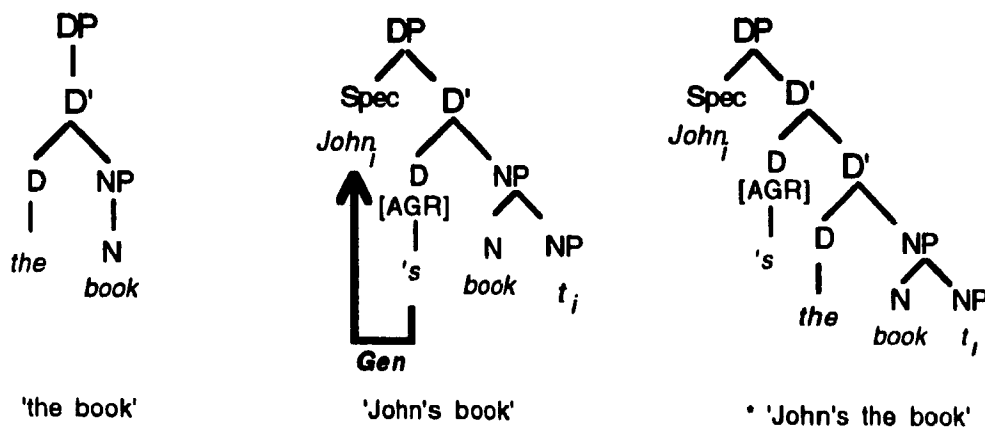
(adapted from Abney, 1987:25)

The third phrase ("*John's the book") is ruled out because the Determiner head cannot iterate. There cannot be more than one functional head in the projection. Either the head is filled by a lexical determiner or by the Kase assigning feature AGR, which is realized as -'s on the NP.

Pronouns as DP heads

Abney argues that personal pronouns are actually members of the syntactic category of determiners (1987:281). His claim is supported by the fact that pronouns do not act like nouns in taking determiners, possessors, adjectives and so on. Also pronouns and

determiners both seem to show a full range of grammatical features such as person, number and gender. The similarities between determiner and pronoun features (such as them both being members of closed lexical classes and marking grammatical features) leads Abney to claim that they both belong to the same functional category, Determiner, and are generated in the DP head position (Abney, 1987:284).

The use of determiners (and pronouns) and the possessive morpheme are signs of functional projections of the Determiner phrase type in English. Next we turn to properties of the Complementizer Phrase projection.

2.2.3 Complementizer Phrase (CP)

The Complementizer phrase in English is generally used in more complex structures, for example where there is a subordinated clause or a question form.

The head of CP selects an IP as its complement. Given a verb that selects for this type of complement (such as 'wonder' or 'believe') lexical complementizers such as 'that', 'if' or 'whether' can fill the head COMP position and be followed by a (subordinate) sentential phrase. This is shown below.

Figure 5
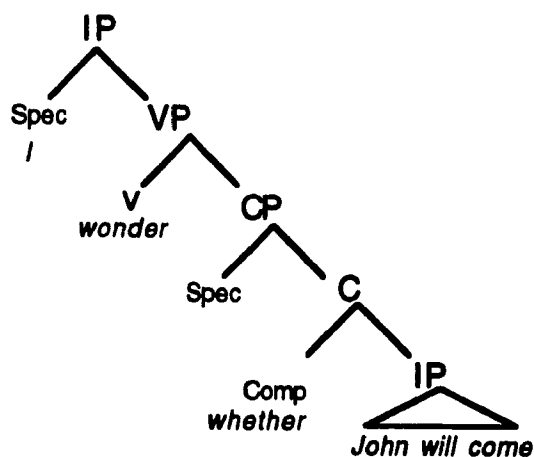
"I wonder whether John will come"

If the COMP head is not filled by an overt complementizer, the structure can be used to form questions. Question forms in English can be of two types, Yes/No questions or questions formed with a Wh- word (such as 'who', 'what', 'when', etc). Subject-Auxiliary Inversion is a process by which Yes/No questions are formed. In the formation of these questions, the auxiliary moves from the Infl node to Comp, raising above the Subject which is in Spec,IP. For example, the question form is derived from a declarative in the following way.

Figure 6
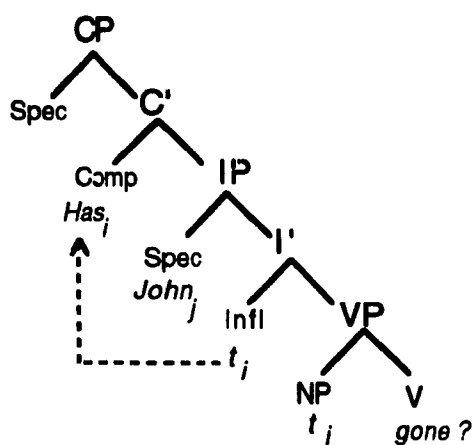
"John has gone" --> "Has John gone?"

Evidence for the fact that the auxiliaries (and modals) occupy the Comp position comes from the fact that complementizers and inverted auxiliaries cannot co-occur. The inversion is blocked if there is an overt complementizer, as shown in examples (14) and (15) below.

14)   She wondered [CP whether/if he would come back again]
15) *She wondered [CP whether/if would he come back again]
(Radford,1990:415)

If the COMP head position is not filled by an overt complementizer, it can bear a WH feature. The Wh-feature licenses the projection of the Specifier position Spec,CP and a WH-phrase may move into that site in the formation of a WH-question. Under Spec-head agreement, the Wh-phrase must correspond to the Wh-feature in the head. When the Wh-

phrase moves to the Spec,CP position, do-insertion is invoked. The complementizer head position is then filled by the inverted auxiliary.

[CP Who_i [C' did_j [IPAlice [I' t_j [VP hit t_i]]]]]
'Who did Alice hit ?'

The properties of the Complementizer Phrase can be seen when overt complementizers are used, in the formation of questions using Sub-Aux inversion and in the formation of Wh-questions.

Summary

In summary, we have seen that there are a number of linguistic elements which show the properties of functional categories in English. For projections of the Determiner Phrase, evidence is provided from the use of determiners like 'a', 'the', 'this' and from genitive case assignment (the possessive '-s' morpheme on nominals or possessor pronominals). For the Inflectional category, evidence comes from nominals in Spec,Infl position, inflections such as tense and third person agreement on verbs, the use of auxiliaries and 'do', modals and the positioning of these elements with respect to negation. For the Complementizer category, evidence comes from the use of complementizers such as 'that' or 'whether' before subordinate clauses, Wh-words in the Spec,Comp position and Sub-Aux inversion in question formation. In the data section we will be analyzing the children's utterances for these elements. Their presence or absence will indicate the use of functional categories.

Before discussing how or whether these properties are exhibited in the data, I will briefly discuss properties of functional categories in the children's first language, Inuktitut.

2.3 Inuktitut Grammar and Functional Categories

The native language of the subjects in this study is Inuktitut, a member of the Inuit subbranch of the Eskimo language family, which is spoken by the Inuit, an aboriginal people of the Canadian Arctic. The dialect spoken in Iqaluit, the site of this research, Lake Harbour and Pangnirtung is the Southeast Baffin dialect of Eastern Canadian Inuktitut. However, Dorais (1990) notes that as an administrative centre for the Baffin Region, Iqaluit is a mixed community where several dialects are spoken. Some of the examples given in the text below may be from different dialects of Inuktitut, as cited in the literature, but the properties discussed apply equally.

As I am only looking at the properties of functional categories in English second language learning, a complete description of Inuktitut syntax is beyond the scope of this thesis. I will focus more on how functional categories exhibit their properties in that language as it is important to establish whether the children have access to equivalent syntactic properties in their L1. The subjects were chosen on the basis of their command of Inuktitut so I am assuming that they will already have mastered the ways in which functional categories are represented and exhibited in their L1. The sections below give a short overview of Inuktitut grammar and briefly focus on how properties of functional categories are exhibited.

2.3.1 Inuktitut Grammar

Inuktitut is a polysynthetic language in which complex notions are expressed by combining word stems with one or more affixes to create a syntagmatic unit. 'Words' do not occur as discrete items like the verbs, nouns, and adverbs of English but are constructs of a number of different 'units of meaning' linked together depending on the idea(s) to be expressed. Affixation in Inuktitut is therefore extremely rich and complex.

Affixes are combined to develop and elaborate a concept, by changing and transforming meaning as the syntagm is built. Or, as Mallon describes it, "Words in

Inuktitut can switch back and forth [between Noun and Verb forms] like demented linguistic chameleons" (1991:154).

Harper (1979:4) divides the possible types of affixes into four main categories;

• affixes added to nominal stems to create a nominal unit

• affixes added to nominal stems to create a verbal unit

• affixes added to verbal stems to create a verbal unit

• affixes added to verbal stems to create a nominal unit

Mallon (1978, in Wilman,1988:34) subcategorizes the affix groups further with the following;

• nominal endings similar to those of Latin declensions

• verbal endings that are pronominal in nature

Nominal endings are marked for number (and person and number in relations of possession) and for case. I interpret Mallon's "Latin Declensions" to be case endings such as Absolute (also termed Basic or Nominative), Relative (also identified as Genitive and Ergative), Accusative (or Secondary), Simulative, Locative, Allative, Ablative, and Translative (Dorais, 1977, 1978; Harper, 1974). The last four cases generally indicate spatial relations, while the Simulative ending is rarely used (Dorais,1988). As the varied case names indicate, there is some overlap in the grammatical function of the endings. Of particular interest here is the fact that possessor nominals take the same case ending as do the subjects of transitive verbs (thus supporting Abney's analysis). This will be discussed in more detail below. Subjects of intransitive verbs and objects of transitive verbs take the Nominative/Absolutive or unmarked case. Listed here are some examples of case endings.

Absolute	nuna	'land-abs'
Genitive	nuna-**up**	'the land's'
Accusative	nuna-**mik**	'land-acc'
Locative	nuna-**mi**	'on the land' etc

Verbal endings are marked for person (first, second, third and third coreferential),
number (singular, dual and plural), mood (such as Indicative, Interrogative, Dubitative and
so on) and are Specific (transitive) or Non-specific (intransitive). Affixes such as negation
and temporality are also included. Mallon has suggested the following basic verbal
structure where the final two elements have historically become one unit of inflection (class
notes,1991);

Verb stem+(Adverbial+Modality+Time+Neg+)(Aux)+Mood+Agreement
Examples of some inflections;

<u>Indicative</u>
taku-**jutit**	'**you** see'
taku-**nngi**-tutit	'you **don't** see'
taku-**rataaq**-tutit	'you **just** saw'
taku-**jarma**	'**you** see **me**'

<u>Interrogative</u>
| taku-**vit**? | 'Do **you** see?' |
| taku-**vinga**? | 'Do **you** see **me**?'   etc |

As the list of affix types suggests, the major lexical categories in Inuktitut are
Nouns and Verbs although localisers and small words (such as demonstratives) appear as
individual items (Dorais,1990:89). Harper goes so far as to say "The verb is the essence of
the Eskimo language" (1974:6) and implies that nominal affixation will follow from
mastering the verbal system. The richness of verbal inflection does in fact relieve some
nominal use. For example, pronouns are not often used because the inflection forms can
indicate person for both the subject and object of the action. The other two lexical
categories, Adjectives and Prepositions, are generally accounted for in affixation processes.
Spatial relations are indicated by the case endings mentioned above while adjectival features
are included in the syntagm, as in the following examples.

illu	'the house'
illu-**mi**	'**in** the house'
illu-**kutaaq**	'the **long** house'
illu-kutaa-mi	'in the long house'
illu-kutaa-**raaluk**	'the **big** long house'
illu-kutaa-raalu-mmi	'in the big long house' etc
(Dorais,1988:15)	

2.3.2 Null Subjects

As a highly inflected language with a rich agreement morphology, Inuktitut is not surprisingly a null subject language. The null subject phenomenon occurs in languages such as Hungarian or Spanish, where tensed sentences allow the subject to be phonetically null or unrealized, but not in languages such as English where the subject must be phonetically realized. Jaeggli and Hyams (1988) claim that it is languages with morphologically uniform paradigms that permit null subjects. "A morphological paradigm is uniform if all its forms are morphologically complex or none of them are... Only morphologically uniform paradigms license null subjects" (Jaeggli & Hyams,1988:241). Inuktitut morphology is certainly very uniform and in this respect is consistent with their claim.

2.3.3 Word-Order

Many characteristics of Inuktitut such as a rich case marking system, free or frequent pronoun drop, lack of pleonastic NPs and so on, are also features of languages with free-word order. Many non-configurational languages have been analyzed as having no projections beyond the lexical category projection and therefore no functional categories (i.e. all projections within the language are X' and never X"). Evidence from Japanese, for example, (Fukui & Speas, 1986) shows that what have traditionally been analyzed as complementizers, case inflections and so on, can in fact iterate which would not be possible if they were functional heads.

Although the roles of phrasal constituents are marked by inflection in Inuktitut, word order is not that free and case markings cannot iterate. Both of these features support the analysis that Inuktitut does have projections beyond those of lexical categories. Inuktitut is generally considered, along with the other Inuit languages, to be an SOV language. There are several constraints on the order of nominals. For example, possessor

nominals precede the possessed nominal while modifiers follows the nominal as shown in (1) and (2) below.

1)   Piita-up   nulia-nga   *nulia-nga Piita-up
        Peter-gen wife-3psPoss   wife-3ps Peter-gen
        'Peter's wife'

2)   arnaq kalaaliq   kalaaliq   arnaq
        woman greenlandic   greenlandic woman
        'Greenlandic woman'   'female Greenlander'

(West Greenlandic, Bok-Bennema,1991:81)

2.3.4 Ergativity

Inuktitut is an 'ergative' language which signifies that in transitive structures, the theme of the action bears the same characteristics as does the agent of the action in an intransitive structure, namely Nominative (also called Absolutive or Basic) case. The agent of the transitive verb bears the Ergative case.

Examples of transitive (Specific) and intransitive (Non-specific) structures are given in (3) and (4) below. In the transitive structures, the subject and object nominals are next to each other but are differentiated by their morphology. Absolutive (Nominative) case is not overt.

3)   anguti taku-juq
        man-abs see-3ps   'The man sees'

4)   anguti-up   illu   taku-janga
        a man-erg   house-abs   see-3ps3ps Participative   'a man sees the house'

The theme of the verb can be indicated by an Accusative (or Secondary) ending when the verb maintains the non-specific conjugation. This forms an antipassive construction such as (5):

5)   anguti   illu-mik   taku-juq
        man-abs house-acc see-3ps   'the man sees a house'

The Accusative (or Secondary) ending is also used when there is more than one object as in (6) below:

6)   Jaani   anguti-up illu-mik aittu-paa
        Johnny-abs man-erg   house-acc give-3ps3ps (Indicative)
                                        'a man gives Johnny a house'
(Durais,1988:29)

2.3.5 Functional Projections in Inuktitut

Given the generalization (formulated as the Unaccusativity Hypothesis) that "In ergative languages, verbs can never act as structural Case-assigners" (Bok-Bennema,1991:21), Inuktitut nominals must acquire case in some other way. The characteristics of Inuktitut case assignment suggest that Nominal phrases (NPs) and sentential phrases (IP) both have an inflectional (i.e functional) head and nominals acquire case by Spec-head agreement. Although the head of NP selects an NP rather than a VP, movement into the Specifier position allows the assignment of the agreement morpheme in the same way for both IPs and NPs. This analysis is further supported in Inuktitut when we look at the characteristics of the case assigned. Consider the following examples (7) through (11).

7)   inu-up   ulu-nga
        person-gen knife-3psPoss   'the person's knife'

8)   inu-up   malik-tanga
        person-erg follow-3ps3ps   'the person follows it'

9)   inu-up   tuktu   maliktanga
        person-erg caribou-abs follow-3ps3ps 'the person follows the caribou'

10)   inuk   taku-juq
        person-abs see-3ps   'the person sees'

11)   inuk   tuktu-mik taku-juq
        person-abs caribou-acc see-3ps   'the person sees the caribou'
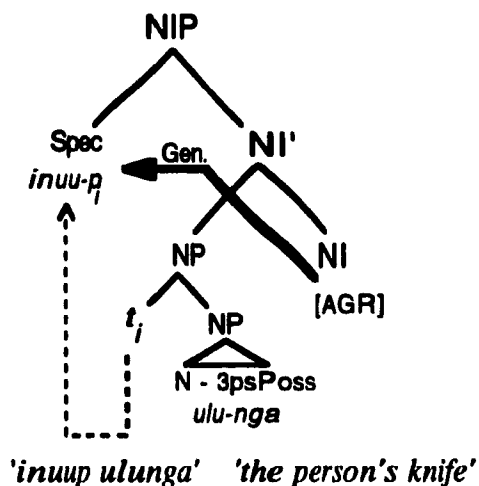(from Mallon,1991:83)

In these examples we see that the case ending of possessor nominals is the same as that of the subject of transitive verbs. Mallon and Harper both draw attention to this fact. Mallon even suggests briefly that it can be explained as a nominalization and a verbalization of the same grammatical relation. According to the syntactic framework we have been referring to throughout this work, this parallel between Inuktitut NPs and sentential (IP) clauses can be explained in the following way.

There is an inflectional head (AGR) specified for person and number which agrees with the nominal (given Spec-head agreement). The nominal moves into the Specifier position where it is acquires an agreement morpheme from the inflectional head. In Inuktitut that morpheme is Genitive (=Ergative) case when the verb is transitive. Thus, it appears that Genitive assignment to Nominal Phrases (the maximal projection labelled Nominal Inflection Phrase or NIP after Bok-Bennema) is also a feature of transitive IPs.

2.3.6 DP (or NIP)

In Inuktitut there are no Determiners or articles of the type used in English, as the equivalent information is encoded in the nominal syntagm. Relations of possession are indicated by Genitive case assignment. In order to acquire the appropriate case, the possessor nominal moves to the Spec,NIP where it is assigned case. The possessed nominal receives an affix which agrees in person and number with the possessor. In the structure below, based on example (7) above, we can see that the Nominal Inflection head, which includes Kase-assigning features, projects a structure similar to Abney's DP for English (Bok-Bennema 1991:134).

Figure 7

NIP

Spec   Gen.   NI'
inuu-p

NP   NI
                [AGR]
t;   NP

N - 3psPoss
ulu-nga

'inuup ulunga'   'the person's knife'

2.3.7 IP

Evidence for properties of the INFL category is shown mainly in properties of inflection. An infinitival element such as English's 'to' does not occur. As a null subject language with rich morphology, pronominal subjects are rarely expressed. Following standard analyses (Hyams,1986; Jaeggli & Hyams, 1989, etc) the functional head, Infl, licenses 'pro' in the subject position.

When lexical subjects (and objects) do occur, their role as sentential constituents is shown by the relevant case marking. Figure 8 below shows the structural analysis of the transitive phrase (9) from the set of examples above.

Figure 8

' inuup tuktu maliktanga '
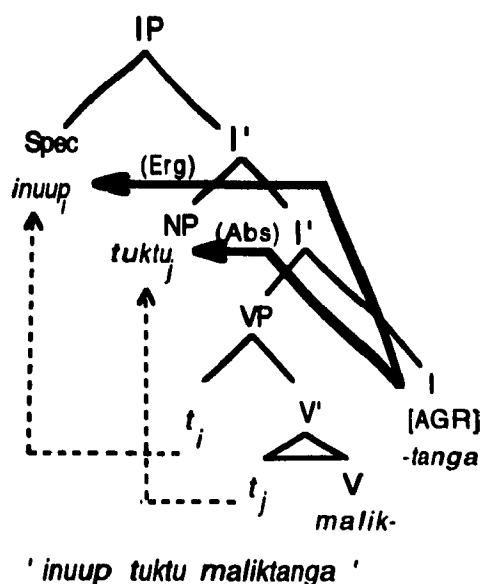
In Figures 7 and 8 above the Genitive/Ergative case is assigned by Spec-head agreement to an NP in the Spec position of an NIP or a transitive IP. The Inflectional head of IP in Inuktitut can assign both Genitive/Ergative and Nominative/Absolutive case in its transitive form, otherwise it only assigns Nominative/Absolutive case.

The direct object must acquire case and satisfy the Case Filter and does so by moving or 'scrambling' to a higher position, here adjoining I' [NP,I'], to receive case by adjunct-head agreement. As the subject has received Genitive/Ergative case, the Nominative/Absolutive case is free to be assigned to the object (Bok-Bennema,1992).

In an intransitive IP, Nominative/Absolutive case assignment occurs by Spec-head agreement as in English. Figure 9 illustrates this using example (10) above.

Figure 9

' inuk takujuq'
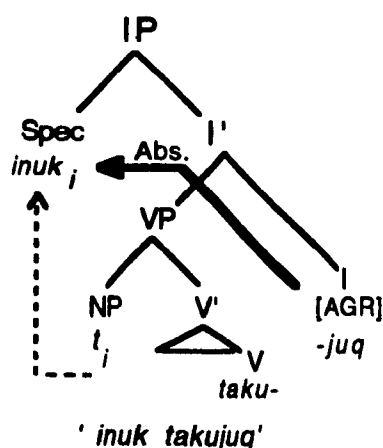
As the examples have shown, the subjects of transitive verbs and the subjects of intransitive verbs appear to be in the same S-structure position but bear different case marking. Under the analysis presented above, Genitive/Ergative marking occurs exceptionally and may be due to the features (e.g. [+ Genitive] vs [+Nominative]) of the verbal inflection node AGR (and possibly MOOD). Because Infl (as well as other heads) in Inuktitut is right-branching, the movement of V to I is not visible, the two positions being adjacent.

2.3.8 CP in Inuktitut

As well as lacking overt determiners or articles, Inuktitut lacks complementizers such as 'that' or 'if' which introduce subordinate clauses. Although Inuktitut does not have relative clauses in the same way as English, certain modifying NPs seem to serve an attributive function. Similarly, there is no overt Wh-movement in a question-forming process. Wh-phrases exist in Inuktitut and are inflected for number and case but are not required to move, i.e. they occur in situ. In English, the use of complementizers to introduce subordinate clauses and Wh-movement in questions rely respectively on the head position and the specifier position projected by the head. Evidence for the CP projection in English is based on those characteristics.

With regards to Wh-phrases, Bok-Bennema states that "The distribution of interrogative words at S-structure does not differ from that of other NPs." She gives the following example from West Greenlandic, shown here as (12).

12)   Umiarsuaq qassi-nut aalla-ssa-va ?
        ship-abs how many-all leave-fut-3psInterrog?
        'When (i.e. what hour) will the ship leave?'   (1991:88)

If Inuktitut does not use the Spec,CP for Wh-movement and does not have overt complementizers, does this mean that it does not have CP projections? Inuktitut does have a 'fronting' or 'focusing' rule, which moves the focussed or topicalized constituent to a position at the beginning of the phrase. It has been suggested for other languages (such as Hungarian (Kiss, 1987)) that this Topic or Focus position is in fact Spec, CP. Examples (13) and (14) in West Greenlandic (from Fortescue, 1984) show that there is a 'fronting' rule which may be evidence for this position (in Bok-Bennema,1991:142).

13)   Piniartu-p puisi   pisar-aa
        hunter-erg seal-abs catch-3ps3ps, Indicative
        'The hunter caught the seal'

14)   Piusi piniartu-p pisar-aa
        'It is the seal that the hunter caught'

Summary

This section has shown how processes of affixation and movement provide evidence for functional categories in Inuktitut. In contrast to English, functional heads generally contain Kase-assigning features and not functional elements such as determiners and complementizers.

In the next section the acquisition of functional categories will be discussed.

Section 3 The Acquisition of Functional Categories

3.1 First Language Acquisition

A number of theories have been proposed regarding the initial state of child language and the role of functional categories in acquisition. On the one side there are arguments that functional categories are not present in early child language and that their properties develop or appear only after some time (E.g. Guilfoyle & Noonan,1992; Radford,1990a,b, 1992a,b). On the other side there are arguments that functional categories, or at least some of them, are available to children from the outset even if not all of the properties are yet accessed (E.g. Whitman et al,1990; Deprez & Pierce,1993; Clahsen,1992). In the discussion below I shall briefly outline some of the arguments from both sides focussing mainly on the acquisition of English.

Guilfoyle and Noonan's (1992) 'Structure Building' hypothesis and Radford's theory of the development of English syntax both assume that in early child language only lexical categories (such as nouns or verbs) and their projections are present. Guilfoyle and Noonan propose the Structure Building hypothesis according to which the child's initial language contains the principles of UG but these apply only to the lexical elements which are present, giving a Lexical Grammar (LG). Due to the nature of the LG, initial child language cannot have any movement by substitution, which would require landing sites such as the Specifier positions of functional heads or functional head positions themselves, for movement of nominals, verbs and so on. If these positions are not present, the only type of movement available to the child in the initial stages would be by adjunction. The Functional Grammar (FG) emerges with maturation as an expanding 'skeletal' structure develops.

According to Guilfoyle and Noonan's analysis, initial child language does not show evidence for the use of the structures projected by INFL, COMP, DET. Early English is characterized by telegraphic style speech which misses out function words, such as

determiners and modals. Inflectional marking on verbs (such as tense) and nouns is minimal. According to the Structure Building hypothesis, in the initial stages of language the lexical heads of phrases cannot move because landing sites projected by functional heads are not available and therefore they can never pick up the appropriate features. The following samples of children's speech suggest that prenominal elements are appearing in the Spec,NP, where they may iterate in contrast to Spec,DP where they could not do so.

7a) This a Bonnie's pants.
 b) Is that the blue mine?
 c) The a my book.
(Guilfoyle & Noonan,1992:249)

Guilfoyle and Noonan also show that the use of null subjects in early child English may be due to the absence of the IP structure. If the child had only a VP structure then 'pro' could be licensed in Spec,VP, giving sentences with null-subjects. However, English requires the Subject to raise to Spec,IP in order to receive case. 'pro' cannot appear in this position in English and so null subjects in adult English are not permitted. The VP structure in child English would also explain the absence of modals which are generated under IP. Guilfoyle (1984) proposed that the appearance of the [+Tense] feature along with the use of modals indicates the use of the IP projection, causing subjects in English to be realized phonetically.

According to the Structure Building hypothesis, as the child 'matures' the functional category system starts to emerge and is 'built up' over time. The properties of these categories then begin to apply.The notion of 'building' predicts that some functional categories will appear before others, DET before INFL and INFL before COMP.

Radford (1990a,b; 1992a,b) also proposes that early child language consists of lexical categories before functional categories. Radford bases his arguments on a series of 'stages' that he identifies in the development of child language. The first stage is the

'precategorial' one. At that earliest stage, children are said not to have categorized linguistic elements into grammatical categories.

The second stage is one of categorization whereby children learn certain grammatical functions and sort linguistic elements into lexical categories. This stage occurs (for the English language children studied by Radford,1990a) between the ages of 1:6 and 2:0. Radford argues that this process of categorization occurs as children acquire knowledge of thematic roles, allowing them to develop a lexical-thematic grammar. This gives the characteristics of telegraphic-style speech, containing elements from the main lexical categories, indicating thematic roles by position, but containing no overt case-marking on nominals or inflections on verbs.

At this stage, child language is said to contain elements from lexical categories only. In structural terms, phrases are all simple lexical projections, such as NPs or VPs. The lack of verbal inflection would reflect the lack of the projection of the I-system while the lack of Genitive case-marking would reflect the lack of a D-projection.

Radford demonstrates that for his English-speaking subjects at this stage, possessive relations are indicated by placing the possessor Nouns as adjuncts to the noun phrase. The possessive morpheme 's is not present. He gives these examples.

Mommy cottage cheese. Mommy milk. Mommy hangnail. Wendy cottage cheese. Baby milk. Tiger tail... (Kathryn 1;9)
Daddy coffee. Daddy car. Daddy book. Daddy tea. Daddy shɪll. Daddy juice. (Jonathan, 2;0)
(1992a:202)

The lack of morphological markings and case on nominals and pronominals, as in the possessor relations above, supports Radford's claim that grammatical systems which are non-thematic (such as the functional category system) are not yet available to the child in the second stage. He gives further evidence from the lack of agreement or tense inflections on verbal forms and the lack of auxiliaries and modals.

Adult Model Sentences	Child's Imitation
Mr.Miller will try.	Miller try (Susan 24)
I will read the book.	Read book. (Eve 25)
I can see a cow	See cow (Eve 25)
The doggy will bite.	Doggy bite (Adam)

(Radford, 1992a:27)

The structures of the two are contrasted in the following way.

Adult: [IP [DP The Doggy] [I' will [VP [V bite]]]]
Child: [VP [NP Doggy] [V bite]]

The third stage of acquisition argued for by Radford, the functional stage, (said to be reached at about the age of 24 months) is when the child starts to use non-thematic structures productively.

Aldridge's (1989) work on the acquisition of English and the emergence of features of INFL projection, such as tense and agreement affixes, modals and auxiliaries, and auxiliary inversion, also suggests that these features emerge shortly after children reach 24 months. In her view, the child initially uses only a basic or 'small clause system' such as [NP XP] (like Radford's basic 'Subject Predicate' structure as in Radford, 1992). According to Aldridge, the presence of modals in the input language triggers a restructuring of the child's linguistic system so that I-projections and the properties of tense and agreement and so on become available in the child's linguistic system.

A number of linguists argue against theories such as those above. Whitman et al (1990), Deprez and Pierce (1993), and Hyams (1992) are amongst those who argue that properties of the functional category projections are available to child learners at the outset of language acquisition even though the properties may not be immediately apparent.

Whitman, et al argue for the 'Continuity' hypothesis which states that functional projections are available through UG from the beginning. They claim that although certain properties of functional categories may not be visible in early child language, producing the small clause type structures discussed by Radford and Guilfoyle & Noonan, this does not prove that those properties are not available. It simply shows that they are not used.

Whitman et al argue that INFL, DET and COMP are all present at the earliest stages for children and that some properties are in fact discernable quite early on. They demonstrate this with examples of N' deletion in early English, word-order in early German and the use of relative clauses by Korean children.

For example, Whitman et al point out (1990:6) that while Radford claims that children's language at the early stage does not exhibit D projections, he must account for occurrences of the possessive morpheme -'s in early speech. Phrases such as, "That Daddy's" occur although phrases such as "Daddy's book" do not. Under Radford's analysis the '-'s' morphemes are like N' pronouns which occur inside an NP. In other words the morpheme has been categorized as a (pro)nominal element like 'one' and not as an inflectional element.

That [Daddy's]   --->   [NP [NP Daddy] [N' 's]]
    [Daddy one]   --->   [NP [NP Daddy] [N' one]]

Radford's analysis would require an (incorrect) categorization of the morpheme as a pronominal element and then re-categorization in the later stages.

Whitman et al demonstrate, however, that the phrase could just as well be analyzed from the earliest stages as the result of NP deletion as in:

[DP [DP Daddy] [D 's] [NP e]]

Under this analysis the (pro)nominal element has simply been deleted. The N' Deletion analysis does not require any further (re)categorization on the part of the learner and the features of the functional category (in this case Genitive case assignment) are available from the outset.

Valian (1991) compares the use of null subjects in American and Italian children and argues against the Lexical Grammar hypothesis as the child's initial state. If, as Guilfoyle & Noonan suggest, the early stages of English (and all child languages) contain

only a VP structure then the characteristics of null subject use should be the same across languages for this stage of acquisition. Valian shows, however, that although American children do use null subjects in the early stages of language, they use them in different degrees than do Italian children. They produce significantly more (almost twice as many) subjects and pronominal subjects than the Italian children do "at comparable ages and levels of linguistic sophistication"(1991:49).

Valian argues that instead of beginning with an incomplete (VP only) system which needs some mechanism in order to develop, the child begins with a "skeletal" grammar which is altered by learning from the input (1991:79). In English, adult input will rarely give evidence for null subjects. In contrast the Italian child learns from input how utterances without subjects are licensed while verbal inflection also helps to establish the subject's identity. Valian suggests that the occurrence of null subjects in early American English can be accounted for by performance factors rather than by a deficit in the early linguistic system.

Pierce & Deprez (1990) use data from negation in child language to argue that the positioning of negation elements in both child and adult language is situated at the head of its own (NegP) projection under the IP phrase (following Pollock, 1989). They demonstrate that children have access to the IP structure for verb movement very early on. For example, they show that in French child language tensed (+Finite) verbs are moved to the left of the negative element 'pas' but remain to the right if they are untensed (-Finite). Their arguments for an early IP structure are supported by a crosslinguistic analysis of child phrases containing Neg elements in Deprez & Pierce (1993). They also provide arguments for (optional) V-movement to Comp in early German and Swedish.

Evidence from languages other than English has been important in pursuing the debate over functional categories in child language. Clahsen, Parodi and Penke (1992) for example, show that the properties of IPs occur in very early child German. Data from verb positioning, negation and inflection indicate that children have at least a minimal IP

structure providing landing sites for movement. Less traditionally investigated languages have also provided evidence in the debate. For example, Lee (1991) provides an in-depth analysis of the use of the COMP structure in early child Korean. In Hyams' discussion of functional projections in early child language she shows that subject-verb agreement morphology in Italian is present as early as 1;8 for some children (1992:372). Similarly, evidence for case assignment on pronouns in several other languages as well as Italian is evident by age 1;9.

Crosslinguistic data is crucial in determining not only the underlying properties of functional categories in languages, but also how (or if) they are present in UG from the beginning. At the very least crosslinguistic studies suggest that these properties emerge differently across languages. In Radford's and Guilfoyle & Noonan's work the emergence of the functional system is linked quite strongly to maturation or 'development' patterns. Radford claims that at about 20 months, children reach a 'critical stage' at which they "begin to progress to a more advanced (biologically predetermined) stage of linguistic development" (1990:275). This kind of maturational claim puts a great burden on the innateness of linguistic development. For such a hypothesis to be valid, it must hold for all children across all languages which has yet to be shown.

Theories such as the Continuity hypothesis must still account for the characteristics of early child language where the properties of functional categories are not always evident. The question to be faced then is how the emergence of functional categories is triggered. For example, Guilfoyle & Noonan refer to the rich agreement morphology of Italian verbs as compared to English, which may provide input for the earlier acquisition of tense and agreement marking in Italian (due to relations of Subject-Verb agreement associated with the INFL projection). Aldridge suggests that the use of modals and auxiliaries will evoke the correct use of INFL properties in English.

There may be language-specific characteristics of INFL (and possibly the other functional categories) which translate into parameterized values. For example, Pierce and

Deprez (1990) adopt Koopman and Sportich's (1988)proposal that there is a parametric option assigning Nominative case under government (inside the VP) or by structural case assignment of Infl to Spec,IP. These could be two values of an INFL parameter which children have to determine based on input. Bok-Bennema (1991:219) suggests a parameter set by language-specific input in which children have to determine which heads can be Genitive case assigners in the same way that the child would have to decide whether Infl can license null subjects. For Inuktitut, clues from agreement-morphology in the input allow the child to set that parameter to allow both Infl and NI to assign Genitive case. In English only Det (the equivalent to NI) can assign Genitive case.

3.1.1 The Acquisition of Inuktitut

Few extensive studies have yet been completed on the acquisition of Inuktitut. Crago's (1988) study on the cultural context of communicative interaction with young pre-school Inuit children focuses on how young children are exposed to their mother tongue. Wilman's (1988) work on the linguistic abilities of Inuktitut speaking children in their first year of schooling discusses how Inuit children first use their language. Fortescue's description of a young child learning Greenlandic (1984) and Allen and Crago's work (1992 and in progress) on the acquisition of linguistic properties of Inuktitut are examples of studies more specifically focussed on the acquisition of linguistic properties of Inuktitut. No studies have focussed specifically on the emergence of functional categories during the first language acquisition of Inuktitut.

Summary

Despite different views held by linguists regarding the initial state of child first language grammars, there is a general concurrence that by two years of age both lexical and functional category systems are accessible. In the next section, we will focus on issues regarding the initial state of second language grammars.

3.2 Second Language Acquisition

In the previous section, the discussion focussed on theories which argued for or against the presence of functional categories from the outset of first language learning. The Maturational and Structure Building hypotheses argue that these properties become available in the later stages of development but are usually acquired by the 24-month period. The Continuity hypothesis claims that the functional categories are available from the outset but their properties are not always visible. Although there are differing views as to how the principles and properties of UG are accessed, there is a general consensus that after the initial stages of L1 acquisition the process is complete and the language-specific means of realizing them are in place. The problem for studies of second language acquisition is to determine how functional category properties become available to a speaker learning a second language.

Given the assumption that maturation with respect to language is complete by the time a learner begins to learn a second language (that is, ruling out bilingual learning) there are three basic possibilities for the 'initial' state of second language acquisition (White,1989).

1) UG is still available to the L2 learner and the properties are accessible just as they are for L1 learning;

2) UG is not available for L2 learning. Only L1 acquisition can access the UG system and that process has been completed;

3) UG is still available but not in the same way as for L1 acquisition. For example, the L1 may be an intermediary system with the learner initially assuming L1-type features in the grammar, but gradually (perhaps never fully successfully) readjusting to the L2 system.

As an L2 learner progresses in the acquisition of the L2, the grammar (or series of grammars) used is known as the Interlanguage Grammar (ILG). The focus of many L2 acquisition studies is determining how or whether the ILG is formed with access to the principles and properties of UG (e.g. whether it contains the properties of functional and lexical category systems) or whether its characteristics are different. By examining the features of the ILG, we come closer to determining how a L2 is acquired.

If UG were still available for L2 acquisition, as it is for the L1, possibility (1) above, then L2 acquisition should progress in the same manner. The ILG should always be a 'natural' language, constrained by the principles and properties of UG. If UG is not available, possibility (2), then we would expect violations of UG as the learner uses other means, perhaps other cognitive abilities, in the learning process. If this were the case then we would expect ILGs not to be 'natural' languages. As learners do attain certain levels of competence in their second language, possibility (2) seems too strong a claim. However, L2 acquisition does not progress in exactly the same way as for the L1, making possibility (1) equally unlikely.

The third possibility, (3) above, could account for the fact that ILGs do not violate UG and also that they have different properties than the language of L1 learners. One significant factor in L2 acquisition is that the L1 has already been acquired. The learner often assumes features as they are realized in the L1. This 'transfer' of linguistic values and features from the L1 distorts the ILG during its progression towards the L2 grammar. If the ILG adopts features as they occur in the L1 this could mask properties which are in fact accessible from UG. Studies of different kinds of L2 acquisition, using cross-linguistic evidence, can help determine to what extent features are adopted straight from the L1 and to what extent UG is accessed directly to determine the relevant properties in the L2.

A number of studies have focussed specifically on the L2 acquisition of functional categories. As in the case of studies of L1 acquisition there are different views on the

presence or absence of functional categories in the early stages of second language acquisition.

Vainikka and Young-Scholten (1991) investigate the acquisition of German as a second language by adult speakers of Turkish and Korean. In German, IP phrases are assumed to be head-final with the finite verb located at the end of an embedded phrase (in the head position) but with the verb obligatorily moved to the COMP position in matrix clauses followed by fronting of some other phrase, leading to so-called verb-second effects. Vainikka & Younge-Scholten analyze their data for properties of word-order by focusing on verb movement, null subjects and subject-verb agreement and determined that while most of their subjects did not (yet) have a 'full German tree', the structures that they did use showed a functional projection beyond the VP. A few of their subjects did appear to have a grammar that involved just a VP. All of the subjects seemed to (appropriately) transfer the head-final value from their L1 to the L2 for the VP structure.

Vainikka & Young-Scholten proposed a series of developmental stages for L2 acquisition. The first stage they call the VP-stage, indicating that the subjects' grammar consisted of only a VP structure. This analysis is supported by a high incidence of null subjects, a lack of modals and auxiliary use (associated with INFL) a lack of obligatory verb movement and a lack of questions with a moved Wh-word (associated with CP) indicating that there are no functional projections past the VP. The second stage is called the IP stage in which the utterances show more verbs raised to INFL, more overt subjects, and the use of modals and auxiliaries. However, even in this second stage subjects still produced a number of utterances which did not show evidence of INFL in that they lacked agreement morphology and obligatory verb-raising. The final stage, the AGRP stage, is indicated by utterances showing a full agreement paradigm as well as frequent verb-raising and the uses of modals and auxiliaries. Also at this stage, subjects are always overt as is required in German.

Vainikka (1993) cites data from Spanish and Italian speakers learning German as well as the Turkish and Korean speakers discussed in Vainikka & Young-Scholten (1991) to support the argument that adult L2 learners acquire their second language by starting with a VP structure and building up to a full tree. She calls the series of developmental stages the "Weak Continuity Hypothesis" in contrast to the "Strong Continuity Hypothesis" which proposes a full tree available from the beginning. Her proposal has a lot in common with the Structure-Building hypothesis of Guilfoyle & Noonan.

Eubank's (1992) study of adult L2 acquisition of German leads him to claim that functional projections are available in the L2 grammar, just as they are present in the learner's native language, but lack the "morphologically-driven specification of associated features" (228:1992). Specifically, Eubank focuses on tense-related morphology and agreement as they relate to verb movement. He argues that once these morphemes appear in the grammar they trigger a reorganization of the L2 syntactic structure which then allows the functional projections to be used productively.

According to Eubank's analysis, the structure of the AgrP and TP nodes (following the split-INFL hypothesis) are in place from the outset but they are unspecified for feature values such as 'weak' or 'strong' AGR or [+/- tense]. The grammar of the initial learning stage lacks the appropriate morphology and word-order is initially derived from the subject assuming L1 values for headedness. In the second stage, morphology comes into play and helps the learner determine properties of the structural positions. At this stage there is more evidence of ordering constraints as well as some evidence of verbs marked for finiteness. The final stage shows evidence of subject-verb agreement which causes, according to Eubank, a 'reorganization' of the syntactic structure. Headedness is readjusted at this stage due to the learner analyzing inflections as distinct from verb-stems and recognizing that the clauses are head-final.

Vainikka and Vainikka & Young-Scholten explain L2 data as starting with a minimal structure and then building it up in developmental stages. Some values such as

headedness are transferred from the L1. Eubank assumes that the syntactic structures are available from the start, as they have already been established for the L1, but the features associated with the projections are not acquired until the learner acquires the appropriate morphology.

Grondin (1992) and Grondin & White (1993) investigate the emergence of functional categories in the acquisition of French by child speakers of English. In these studies, it is argued that the properties of functional projections of DP, IP and possibly CP are present from the beginning. Grondin's analysis shows that the two children learning French produced nominals with determiners from the earliest stages. In fact, there were very few instances of nominals without determiner. Further evidence for the DP projection was provided by the production of possessive marked pronominals and pronouns. Evidence of case marking appears in the DP and also in the use of subjects. Grondin and Grondin & White show that lexical noun phrases, pronominal subject clitics and pronouns as well as null subjects are all produced in the data although the occurrence of null subjects is very low. The majority of all the subject pronouns are correctly case marked providing evidence for the IP projection.

Evidence for the IP projection is also shown by inflection on the verb. In French, main verbs are free to move to the Infl node to pick up the appropriate inflections. Grondin's subjects produced inflected verbs at the earliest stages which indicates that the Infl position is available for the verb to move into. The morphological marking on the verbs was largely correct for person features although there were errors in number agreement which continued for some time. White & Grondin adopt Meisel's argument that "the relevant feature in the agreement system is person and not number" (1993:11). The analysis of movement is supported by positioning of the verb with respect to negation, adverbs and quantifiers and by movement of clitic pronouns which follow the verb to Infl. Arguments for the IP projection are also supported by the presence of inflected modals and auxiliaries in the earliest data collecting sessions.

Evidence for the CP projection occurs late for Grondin and Grondin & White's subjects. One argument to explain the lack of complementizers in the early sessions is that the contexts for their use does not come up until the language gets more complex. Other evidence for the CP projection in French would be from infinitival 'de' in Comp (unlike English infinitival 'to' which occurs under Infl) and the movement of tensed verbs into the head position in the formation of Yes/No questions. White & Grondin's subjects produce infinitival 'de' quite a bit after they start producing overt complementizers, which is late already. Question forms are also often produced in uninverted form, not moving wh-elements to Spec,Comp although comprehension data indicates that the children do not have problem interpreting the constructions.

Although Grondin and Grondin & White show that there is evidence for functional projections at the outset of L2 acquisition, they are unable to determine if this shows that the subjects have access to UG or whether these properties are transferred from the L1. As the learners use properties appropriate to the L2, such as raising verbs to INFL rather than lowering affixes to the verb, placing negative elements appropriately and using complementizers obligatorily, the argument for access to UG is certainly not ruled out.

Lakshmanan (1992) argues that functional categories IP and CP are present in the earliest stages of child second language acquisition. Evidence for use of the IP projection is provided by the use of auxiliaries and the copula 'be' at the earliest stages of English learning by a native speaker of Spanish. Evidence for case assignment properties comes from use of the preposition 'for' which Lakshmanan analyzes as a case assigner in the head of Infl.

The subject in Lakshmanan's study begin's acquiring the L2 at 4;6. In the earliest language samples the copula 'be' is evident. In English the verbs 'be' and 'have' are the only verbs which move to Infl to pick up the tense and agreement features it must discharge. Not only did the subject produce the inflected copula but in repetition of sequences containing a contracted copula, she produced it uncontracted which supports its

status as an auxiliary and not as an unanalyzed affix. Further evidence for the movement of the copula out of the VP into Infl comes from constructions containing negative elements. The subject produced inverted forms with negative elements and inverted question forms such as:

Is no come, snow.	Is the cat the bunny?
It's no ready.	Is this a car?
He's not a kid.	Where is the baby sleeping?
(1992:11,12)	

Lakshmanan argues that the subject obeys the Case Filter at this early stage. As the non-thematic case assigning system works in conjunction with functional category systems, Lakshmanan uses this to support her claim that IP is present from the outset. Evidence for case assignment comes from use of the preposition 'for'. The subject produces a number of verbless constructions such as the following:

Caroline is for English and Spanish.	'Caroline speaks English and Spanish'
For hello.	'Say hello'
This is the boy for the cookies.	(Picture of boy eating cookies)
This is the girl for the sweater.	(Picture of girl putting on sweater.)
(1992:15,17)	

In the underlying structure of these utterances 'for' is analyzed to be in the I position as for the third example above.

[IP This [VP is [NP the boy] [CP [IP PRO [I for] [VP e [NP the cookie]]]]]]

Lakshmanan suggests an analysis in which 'for' takes the place of the infinitival complement 'to' in the head of Infl. From that position, she claims, 'for' assigns case to the NP which has moved to an adjoining position. This analysis is supported further by the following utterances:

Going for eat. (He's going to eat it.)
Is for eat. (He's going to eat it)
First I need ...flou... a big p-- down a big thing for put it over.
(I need a big thing to cover it.)
(1992:23)

There are also occurrences of 'for' in possessive constructions such as the examples below where the genitive case marker is noticeably absent.

This is for me.   (=This is mine)
This is for him.   (In answer to: Whose house is this?)
(1992:16)

Lakshmanan's analysis of the English language samples of her Spanish speaking subject leads her to conclude that the IP projection is available from the outset of L2 acquisition.

Lakshmanan & Selinker (1992) argue that the CP projection system is also present from the earliest stages of L2 learning of English. In English complementizers (e.g. 'that', 'which') are optionally overt. We can have two utterances with the same meaning.

John said [CP [C e] [IP Fred was dead]]] =
John said [CP [C that] [IP Fred was dead]]

Lakshmanan & Selinker suggest that for their L2 speakers, in embedded declaratives, like those above, the complementizer is treated as null. However, once relative clauses are used, this triggers overt use of the complementizer 'that'. In their analysis, the initial stages of L2 acquisition contain Comp and its maximal projection CP, but the complementizer 'that' is always null. As the learner begins to use relative clauses, the complementizer still occurs in its null form. Once the learner begins to use relative clause constructions more productively, the complementizer 'that' is used overtly and is thereafter available in other constructions. It is interesting to note that for Lakshmanan & Selinker's subjects the L1 obligatorily contains a complementizer in embedded declaratives but the learners do not adopt this value for the L2.

3.2.1 Differences between the L1 and L2

The studies above support differing views as to whether learners of second languages begin with lexical projections only or if functional category projections are present in the grammar from the outset. If functional categories are present from the outset,

then the question comes up as to whether learners 'acquire' them by adopting the features and values of their L1 or whether they still have access to UG. In many cases the properties of functional categories in the L1 are similar to those in the L2 and this adds to the difficulty of determining whether UG is still directly available.

Inuktitut, the L1 of the subjects in this study, is significantly different grammatically from English. Below I shall highlight some of the differences and similarities between the properties of functional categories in the two languages. As we have seen (Section 2) Inuktitut is head-final, while English is head-initial. For both languages, however, case assignment is to the right.

DP

Inuktitut exhibits a lack of overt functional elements such as English's determiner heads 'the' and 'a' (as well as lacking Infl's infinitival 'to', and complementizers). The Nominal Inflectional Phrase (NIP) is similar to English's DP in that Genitive case is assigned to the possessor Nominal which moves into the Spec position to acquire case. Case inflection is assigned to the nominal once it is in position. Inuktitut has an additional possessive inflection on the possessed nominal.

IP

English's infinitival 'to' is [-finite] , does not have Kase features and therefore does not assign case. If it is [+finite], Infl bears tense and agreement features which lower to the main verb position. Inuktitut does not have an infinitival element. Verb or affix movement is not visible as the two positions are adjacent, with the inflectional head (bearing the appropriate features) following the verb stem. Nominative case assignment for both languages occurs rightward. In English, nominative case is assigned only to Spec,IP. In Inuktitut, depending on the thematic content of the verb, it is assigned to a sister of I or to

Spec,IP. The Inflectional head shares the ability with the NIP head in being able to assign Genitive (=Ergative) case.

In English, auxiliaries and modals can occupy positions in IP, either moving from the VP (auxiliaries) or by being generated in IP (modals). Auxiliaries and modals (as well as negators) in Inuktitut are infixes in the verbal syntagm. Null subjects are not licensed in English, while they are in Inuktitut.

CP

The status of the CP in Inuktitut is questionable. There are no overt complementizers and Wh-words occur in situ. English uses complementizers or the Comp position serves as an important landing site for inverted auxiliaries in question formation, while Spec,CP is a landing site for Wh-movement.

A number of features in the L1 (Inuktitut) differ significantly from the L2 (English). If the learner adopts L1 values as the initial state for the L2 grammar, they must be reset as the L2 is acquired. For example:

• Headedness must be reset from final to initial
• Case (Nominative, Genitive/Ergative) is assigned by functional heads. For Inuktitut both Infl and the Nominal head can assign Genitive case. In English only the Determiner (Nominal) head may assign Genitive case.
• Infl in Inuktitut licenses null subjects. English Infl does not.

If the learner has access to UG, one would expect these values to be correctly 'set' from the point at which functional categories are available to her. Otherwise we should see values initially set to those of the L1 as the initial properties of the learner's interlanguage.

My hypothesis is that L2 acquisition follows developmental stages that are similar to L1 acquisition. The learner has access to the principles and properties of UG but the features, in this case the properties of the functional category system, are not immediately visible even though they are present. The child has access to a full tree, with both lexical and functional projections, but the features of the functional projections will not be seen until the appropriate triggers have been acquired (perhaps agreement morphology as suggested for Italian, or by the use of modals and auxiliaries as in the acquisition of English). Features from the L1 may also mask or assist in the realization of the functional category properties.

In analyzing the data collected from my subjects, I expected functional categories to develop over time in a manner similar to first language acquisition. I expected to find some subjects with full access to the properties of functional categories in English (i.e to have 'acquired' them) while others would demonstrate comparatively less access to those properties. I expected to see a range of competence with some subjects showing none of the properties of functional categories with others showing a subset of the properties or all of them. After a period of time, I expected to see a development, showing a gradual emergence of functional category properties over time.

As the following section will show, at the first session some subjects already demonstrated use of the functional category system of English while others showed no evidence of their use. This situation did not alter significantly over the time period covered by the testing sessions. I can only conclude from this that child Inuktitut speakers learning English as a second language pass through stages which resemble the initial and final state of first language learners of English. There was not sufficient data to determine whether this was a gradual emergence or whether the use of functional categories is suddenly triggered after a certain amount of time or specific input.

Section 4   **Discussion of Research**

To my knowledge, the second language acquisition of English by child speakers of Inuktitut has not been investigated before now. The data presented here are the results of a pilot study on group of Inuktitut speaking children. One aim of the study was to determine appropriate methodologies to elicit specific linguistic information. Another aim was to provide more information for parents and educators to evaluate the development and progress of their students' second language acquisition in the school setting. From a linguistic point of view, data on the acquisition of a second language which is significantly different from the first language will provide more information for studies in the field of acquisition.

The study focuses on two groups of children; one group consisted of children just beginning school while the other consisted of children who had been in school for a year. This grouping allowed a comparison of students of the same school age who were all entering the schooling system at the same time and exhibiting a range of second language abilities. The first group was tested twice, one month apart, to see if patterns of development emerged after an initial period of input in the school environment. Testing the second group allowed for a cross-sectional comparison with children who are representative of a level of second language competence attained after a year of school.

4.1 Data and Analysis

In order to test my hypothesis that L2 acquisition of English would progress in a manner similar to L1 acquisition (with stages of acquisition reflecting a gradual emergence of functional categories) I collected language samples from a number of young Inuktitut speakers who were in the earliest stages of learning English as a second language (Kindergarten level) and from a group who had already been in school for one year (Grade 1 level). Language samples were collected from each child and were then analyzed for evidence of English functional category properties. The properties of DP, IP and CP

projections that were investigated include features such as case marking, inflections and the use of functional elements. The Kindergarten children were tested twice. The sessions were compared to see if there was an increase in the use of these categories from one session to the next. The results of the Kindergarten students were also compared to the Grade 1 students.

4.1.1 Location of research

The site of this research was Iqaluit, the largest community on Baffin Island in the Northwest Territories. Iqaluit is both a commercial and government centre for the Eastern Arctic and provides a strong link between the South and the other communities on the island. The population make-up fluctuates. Many workers are transient and, especially during the summer months, many families leave town to go South or out on the land. The 1992 residential population count of Iqaluit (municipal count) was approximated at 3200 people. Based on 1986 and 1989 Census data, 60% of Iqaluit's population is of aboriginal origin and 18% of mixed origin. 59% of residents are reported to have Inuktitut as their Mother tongue, while 55% use it as their home language. English is the Mother tongue of 33% of the population while 40% use it as the home language. French is the mother tongue of 7% of the population and 5% use it as the home language.

There are two elementary schools (Joamie School and Nakasuk School) and a high school (Inuksuk High School) in the town proper, with another school in the satellite community of Apex. The first years of elementary schooling are provided in both Inuktitut and English with parents choosing one or the other option. In the Inuktitut stream, the entire curriculum is in Inuktitut with an Inuit teacher or classroom assistant. Formal instruction in English does not occur until Grade 1, when there are short language classes once a week as well as other classes, such as gym or music, which may or may not be held in English. Exposure to English occurs in the playground and the hallways at school, in the town and from television.

4.1.2 Subjects

The subjects for this research project were 15 children who are native speakers of Inuktitut. They were all from Inuktitut-speaking homes and were chosen by their teachers on the basis of their fluency in Inuktitut. All of the students chosen were selected from amongst their peers to be good speakers of Inuktitut. This criteria was important in trying to avoid using subjects who were of mixed linguistic abilities (such as children from bilingual homes) and children who may have had language learning disabilities. The teachers were also asked to select those students who had a general tendency to be talkative. As will be discussed later, this trait may have been in conflict with cultural views on verbal behaviour. As it was, shyness and a general reluctance to speak did affect the data collection somewhat. The teachers did not take the subjects' English skills into consideration during the selection process as all of their teaching was done in Inuktitut.

The Kindergarten students (Subjects #6 - #15) were all from Kindergarten Inuktitut classes. In the Kindergarten groups (Gr K in the tables below), the children were taught for half a day (morning or afternoon sessions) and all in Inuktitut. These children had received no formal instruction in English and were not yet in any English-language activities. Three of the children had come from other settlements where the population has a significantly higher percent of Inuktitut speakers. One child had lived in camp where only Inuktitut was spoken. The remaining subjects had all heard English spoken in town and on television although they would not be required to use it, as Inuktitut is the language of choice in the household, with playmates and so on.

The second group of subjects consisted of 5 children (Subjects #1-#5) from Grade 1 (Gr 1 in tables below) Inuktitut stream classes. Their general command of English as a second language is taken to be representative of a level to be achieved by the younger children in a year's time. These children had all been exposed to at least one year of school, with English used in the hallways, playground and so on, and were starting to receive some formal education in English (such as language and music classes).

At the first data collecting session the Grade 1 age range was from 5(10) to 8(0) while the age range for the Kindergarten group was 4(10) to 5(8). Two subjects were dropped from the original sample for different reasons. Also, a few of the Kindergarten subjects were very silent during the testing sessions. This is reflected in the results below. While this could have been due to linguistic difficulties it could also be due to shyness.

4.1.3 Methodology

The Bilingual Syntax Measure

In order to elicit language samples from a number of children and to be able compare their language, the Bilingual Syntax Measure (BSM) was chosen as an elicitation task (Burt, Dulay & Hernandez, 1973). The BSM consists of a question-answer session relating to a series of cartoons and was developed in the early 1970's for testing and evaluating the English proficiency of bilingual children. It was useful for the purposes of my study because the elicitation materials are designed to prompt replies which include linguistic structures such as pronouns, relations of possession, past tense verbs and so on, i.e. structures relevant to functional categories. By using the same elicitation technique for all the children the language samples could be compared more easily than would have been possible with spontaneous production data. I did not use the BSM scoring procedure.

The BSM elicitation materials consist of a number of different types of stimuli (questions) all based around a series of pictures. (A copy of the BSM is included as Appendix I.) Many of the questions are designed to prompt for replies containing elements from the series of grammatical morphemes identified by Brown (1973) as the first morphemes acquired in L1 acquisition of English, as shown below:

1) -ing
2) in, on
3) plural -s
4) possessive -s
5) the, a
6) past tense -ed
7) third person singular -s

As discussed in Section 2.0 many of these items are evidence for the use of functional categories, such as case marking, tense and agreement inflections, in other words, functional heads.

For some of the questions in the BSM the target is quite simple, such as identifying an object or objects. For example, the plural morpheme is prompted by asking about paired objects as in questions 6 and 7.

Q6: (pointing to two houses)
    What are these?
Q7: (pointing to noses on both houses at once)
    And what are these two things?

The past tense morpheme is prompted by questions about a series of activities as in the last set of pictures using questions 22 and 24 below.

Q22: (pointing to plate in picture 7)
    What happened to the King's food?
Q24: What happened to that apple?

Four questions specifically prompted for '-ing' and possessive marked (possessive pronoun or -'s) answers. For the most part, the answers could be one-word replies which could be analyzed for the feature under investigation.

Question	Prompted answer
Q10: What is he doing to the floor?	mopping/cleaning/washing it...
Q19a: What's the girl doing?	dancing/smiling/laughing...
Q18: Tell me, whose mop is that?	his/the man's/Fred's...
Q20: Whose flower is that?	hers/the girl's/Anna's...

Other questions acted as a general stimulus for a sentence about the character(s) in the picture, such as questions 14, 17 and 19.
Q14: Why do you think their eyes are closed?
Q17: Is the man all wet?
    How come?
Q19b: Do you think she's happy?
Q19c: Why?

These more general questions allowed for more general type answers, although always discussing the characters in the cartoons, which could then be examined for features such as determiners, subject-verb agreement, complex clauses, etc.

Subject-Auxiliary Inversion task

The children were also given a second task, specifically developed for this study and unrelated to the BSM, at a different session in the second month. The Subject-Auxiliary Inversion task was designed to elicit Yes/No questions. This task consisted of 17 sentences in which the auxiliaries 'be' and 'have' or modals could be inverted with the subject to produce an appropriate Yes/No question form. (The elicitation items for this task are included as Appendix II.) If the subject was able to form a question using the prompt this would provide evidence for the CP projection in their language. To form a Yes/No question the auxiliary is moved to Comp, raising above the Subject which is in Spec,IP as in:

[CP e   [IP the man is [VP fat]]]
[CP Is   [IP the man t [VP fat ?]]]

The children were introduced to a large green puppet (my friend, Iguana) who they were going to 'test' using the BSM materials they had already seen. They were prompted to ask the puppet a question by hearing a declarative sentence preceded by "Ask Iguana if...". This kind of prompt made sure that the appropriate question word-order was never modeled for the subject. For example only prompts such as the following were given.

Ask Iguana if the blue man is fat.   Target: Is the blue man fat?
Ask Iguana if the Mama bird will feed them soon.
                                                Target: Will the Mama bird feed them soon?

The examiner avoided using forms such as:
Ask Iguana "is the blue man fat?"   Target: Is the blue man fat?

which would have provided a question-forming model for the subject to follow.

Twenty-nine elicitation items were piloted on two children in Montreal. The two pilot subjects were aged 6(9) (L1 English) and 5(3) (bilingual French and English). With the exception of a couple of agreement errors both pilot subjects handled the task with ease, correctly inverting all of the Subject and Auxiliaries/modals to produce question forms. From the pilot test, 17 items were selected for use in Iqaluit.

Three items were also included to elicit Wh-questions. The Wh-questions were prompted with a 'setup' sentence, such as

I think Iguana is hungry. Let's see if he will eat something. Ask him...
I think Iguana is lonely. Let's see if he wants to play with someone. Ask him...

If the subjects could produce Wh-questions correctly, this would provide further evidence for the CP projection. The Wh-phrase is moved into Spec,CP as in:

[CP [C' [IP Iguana will [VP eat the bug]]]
[CP [C' [IP Iguana will [VP eat what ?]]]
[CP What [C' will [IP Iguana e [VP eat t ?]]]

If the subject formed a question they got to feed Iguana a (plastic) bug and play with him using Panda puppet. As initial attempts at the Inversion task yielded no question forms from the first set of Kindergarten subjects, an Inuktitut version was devised with the purpose of testing whether the nature of the task was problematic for other (perhaps non-linguistic) reasons. (This is included as Appendix III.) A series of nine declarative phrases were developed by a native speaker of Inuktitut using the same set of pictures. The native speaker gave the child a declarative (participative mood) sentence and then told the child to ask the Iguana. For example:

" Una   niri-juq" (pointing to man)   "Iguana aperigu"
this one   eat-3ps   Iguana ask-imp
'he is eating'   'Ask Iguana'

The target being,
"Una   niri-vaa?"   'Is he eating?'
this one eat-3ps (interrogative)

As Inuktitut does not have a subordinating structure similar to the "Ask Iguana if..." type in English, a different kind of prompt was necessary. If the child did not immediately respond, the phrase was uttered again in the dubitative modality, indicating something like "I wonder if XXX" or "Could it be that XXX" as in:

"Una niri-mangaa"   "(I wonder if) he's eating..."
this one eat-3ps (dubitative)
followed by "Iguana aperigu" 'Ask Iguana'.

Interview Procedure

The subjects were taken from their classroom one at a time and tested in the cozy corner of the library (at Nakasuk school) or in a quiet room (Joamie school). The test materials were brought out after a few minutes of chatting with the subject. The test session lasted for about 15 to 20 minutes each time. One month after the first session the test was performed again. A few days after the second BSM task, the children were given the the Subject-Auxiliary inversion. This also took approximately 15 minutes.

All of the Question-Answer tasks were audio and video-taped. The audio tapes were transcribed and then verified using the video tapes. They were checked once again with a combination of audio and video material. The Inversion task was only audio-taped. The results for this task were recorded as correct responses (if the subject produced a question) or not.

4.1.4 Results

The language samples elicited from the subjects are analyzed in the sections below according to the information they provide regarding the use of linguistic structures. As the number of utterances is fairly limited it was not possible to perform statistical evaluations. The data are therefore presented as individual items or as percentages of a total number of items. The subjects are grouped first according to their year in school and then based on the number and length of utterances produced.

Prompted utterances:

Eighteen of the BSM elicitation questions were designed to prompt full phrasal answers about what was going on in the pictures. As Table 1 shows, the subjects differed in the types of phrases they produced. Occasionally they would just say 'I don't know' or shrug their shoulders. Answers which were repetitions of (part of) the question or of the 'I don't know' or 'Yup' variety were not counted and neither were answers in Inuktitut. For comparative purposes only phrases prompted by the BSM questions have been included.

Table 1   Type of Utterance by Subject

Subject Gr K	Age Oct '92	Session 1 (Oct '92) Multiple	Single	(n)	Session 2 (Nov '92) Multiple	Single	(n)
#6	5(6)	77%	23%	13	64%	36%	14
#10	5(6)	67%	50%	15	85%	15%	13
#11	5(5)	83%	17%	6	0%	100%	1
#13	5(5)	0%	100%	10	0%	100%	7
#14	5(4)	0%	100%	2	33%	67%	3
#7	4(11)	0%	100%	3	0%	100%	2
#8	5(8)	0%	0%	0	0%	100%	1
#12	4(10)	0%	100%	1	0%	100%	3
#15	4(11)	0%	0%	0	50%	50%	2

Subject Gr 1	Age Oct '92	Session 1 (Oct '92) Multiple	Single	(n)
#1	6(10)	100%	0%	15
#2	8(0)	89%	11%	18
#3	6(9)	93%	7%	14
#4	5(10)	100%	0%	12
#5	5(10)	94%	6%	18

Multiple : Multiple word utterances
Single · Single word utterances

As the table indicates, the Kindergarten subjects fell into three groups based mainly on the length of their answers. Three subjects (#8, #12 and #15) hardly spoke at all but, as mentioned earlier, shyness or a general reluctance to speak may have been at the root of

their silence. The 'one word' type answers were occasionally combined with gestures to show the direction or agents in the event. This type of utterance is similar to Radford's description of the lexical-thematic stage in first language acquisition.

With the exception of subject #11 who hardly spoke in the second session, the changes in utterance type and number from one session to the next were very small. All of the Grade 1 subjects produced several multiple-word utterances.

Identification and Naming:

Of the BSM stimuli, a number of questions ensured a certain level of understanding or familiarity with the objects or characters in the pictures. This could be considered a type of 'comprehension' subtest. Thirteen questions asked the child to point out (identify) characters or objects in the pictures. If, in the course of the test, the child failed to recognize or identify something, the appropriate object was pointed out and the task continued. (The only object which consistently proved difficult was the 'mop' in Picture 3.) Table 2 below shows how many objects were correctly pointed out by each subject. Table 3 shows how many objects were correctly named.

Table 2: Pointing Task (% correctly identified)

Subject Gr K	Session 1 (n=13)	Session 2 (n=13)	Subject Gr 1	(n=13)
#6	62%	92%	#1	100%
#10	85%	77%	#2	100%
#11	92%	100%	#3	77%
			#4	69%
#13	62%	46%	#5	100%
#14	92%	100%		
#7	77%	62%		
#8	92%	92%		
#12	69%	23%		
#15	85%	92%		

Table 3: Naming Task (% correctly named)

Subject Gr K	Session 1 (n = 6)	Session 2 (n = 6)	Subject Gr 1	(n = 6)
#6	100%	83%	#1	100%
#10	67%	67%	#2	100%
#11	100%	100%	#3	83%
			#4	100%
#13	83%	50%	#5	100%
#14	67%	100%		
#7	50%	67%		
#8	50%	100%		
#12	33%			
#15	50%	33%		

For almost all of the subjects, the identification and naming task was handled successfully. Even though the children had already been asked to identify the objects a month earlier and were assisted if they could not, there was no general pattern of improvement in identification over the two sessions. Half of the subjects did marginally better the second time around, while half did marginally worse. Subject #12 was the only one who identified less than half of the items overall. Subject #15 was very reluctant to speak, which can be seen in comparing the results of the identification (pointing) task and the naming task. None of the Grade 1 subjects had any difficulty with this task.

4.1.5 Evidence for Functional Categories from the BSM

The following section focuses on the use of those linguistic structures which reflect properties of functional category projections and how (or whether) these are present in the data.

4.1.5(1) Determiner Phrase

Two questions in the BSM generally produced one word answers indicating possession or ownership. Questions 18 and 20 were both of the type "Whose X is that?" These utterances

were not counted for length (in Table 1 above) because a single possessive (or Genitive) marked nominal was an adequate answer.

Table 4: "Possessor" response to Questions 18 and 20

Subject Gr K	Session 1 (Oct '92)		Session 2 (Nov '92)		Subject Gr 1	Q.18	Q.20
	Q.18	Q.20	Q.18	Q.20			
#6	this one's	he's	[other]	he's	#1	the guy's	the girl's
#10	he's	girl's	[other]	hers	#2	his	hers
#11	--	her *	--	--	#3	his	his
#13	?	her *	--	hers	#4	his	girl's
#14	--	--	--	--	#5	that man's	hers
#7	?	her *	--	her *			
#8	?	--	--	[points]			
#12	--	[other]	[other]	[other]			
#15	?	?	--	[points]			

* unmarked for possession
? "I don't know"
-- no answer

Table 4 shows that Subjects #6 and #10 are the only two subjects of the Kindergarten group who consistently produce nominals or pronominals appropriately marked for possession. None of the subjects ever produced a Genitive marked nominal in the wrong context, for example when it was a subject or direct object. The Grade 1 group all produced possessive marked nominals or pronominals. Subjects #3 and #6 both had gender errors. #6 repeats the error in the second session although he correctly '-'s' marks the pronoun he uses. The L1 does not distinguish gender in pronouns or nominals and this type of error is also frequent in adult L2 speech.

The elicited utterances (from Table 1) were analyzed for the use of determiners in obligatory contexts. Table 5 shows these results. Due to the fact that the pictures were right in front of them, the children often chose to use pronouns instead of lexical nouns. Subjects #7 through #15 often pointed to the person or object they were discussing and uttered a verb, for example. They were generally not very specific about the actors in the event.

Table 5: Use of Determiners in Obligatory contexts

Subject Gr K	Session 1 (Oct '92)			Session 2 (Nov '92)		
	Det NP	*ø NP	(n)	Det NP	*ø NP	(n)
*6	57%	43%	7	0%	100%	3
*10	57%	43%	7	50%	50%	8
*11	100%	0%	2	--	--	0
*13	0%	100%	5	0%	100%	1
*14	--	--	0	--	--	0
*7	0%	100%	1	--	--	0
*8	--	--	0	--	--	0
*12	0%	100%	1	100%	0%	1
*15	--	--	0	--	--	0

Subject Gr 1	Det NP	*ø NP	(n)
*1	100%	0%	9
*2	100%	0%	9
*3	100%	0%	4
*4	--	--	0
*5	100%	0%	7

Table 5 shows that the Kindergarten subjects, #6 and #10 are inconsistent in their use of determiners. For #10, determiners are used with different nouns in the two sessions indicating that when he does use determiners, they are produced productively and not as part of an unanalyzed unit. #11 seems to use determiners correctly although there are too few NPs to really say. #13 consistently leaves out the determiner suggesting she has not yet determined the appropriate function for English. Of the Grade 1 group, none of the subjects fail to place a determiner before the noun when it was required.

Acquisition of DP

Analysis of properties of the DP phrase, Genitive case marking possessive '-'s' and the use of determiners, shows that of the Kindergarten subjects, #6 and #10 produce the appropriate forms but not consistently. Even though they do not show evidence of the properties half of the time, they do produce correct forms. The fact that they produce them some of the time suggest that they are using unanalyzed forms. As the same nominals did not reoccur in different contexts (for the same subjects), it was not possible to determine this any further. For example, Subject #11 produces two nouns with determiners but as

there are no other nominals and the number is so small, it is not possible to say for sure that these are unanalyzed units. The errors may be due to other performance factors or mistakenly adopting features from the L1 which does not use determiners. There was no significant change for the Kindergarten subjects from one session to the next. With the exception of a single possessive-marked pronoun (Subject #13), by the second session the rest of the subjects had not begun producing the appropriate features. The results for the Grade 1 group subjects demonstrate that they have fully acquired the relevant properties.

4.1.5(2) Inflectional Phrase

Use of Overt Subjects

While Null subjects are not permitted for English both the Kindergarten and the Grade 1 subjects use them occasionally. The distribution of sentential subjects for #6,#10 and #11 indicates that null or overt subjects are both used although for #6 the use seems to increase somewhat in the second session. For subjects #13 to #7 the lack of overt subjects is very much the rule although there are very few examples. Subject #7 utterances were almost all single untensed verbs. As it is hard to determine properties of the sentence from single word utterances, these may or may not have included null subjects.

Table 6: Distribution of Subject types (Overt or Null)

Subject Gr K	Session 1 (Oct '92) Subject Type			Session 2 (Nov '92) Subject Type		
	overt	null	(n)	overt	null	(n)
#6	91%	9%	11	45%	55%	11
#10	62%	38%	13	75%	25%	8
#11	83%	17%	6	0%	100%	1
#13	0%	100%	1	0%	100%	3
#14	0%	100%	2	0%	100%	1
#7	0%	100%	(3)	0%	100%	(1)

Subject Gr 1	Subject Type		
	overt	null	(n)
#1	93%	7%	15
#2	75%	25%	16
#3	64%	36%	14
#4	100%	0%	12
#5	94%	6%	17

As Table 6 shows, even the Grade 1 group occasionally uses null subjects. This is most likely due to transfer effects from the L1. Infl licenses null subjects in Inuktitut, but not in English. Both sets of subjects seem to alternate between using null and overt subjects. There was no significant increase in the use of overt subjects from one session to the next.

VP internal Subjects

Two of the subjects produced utterances where it appeared that the subject remained within the VP. In these types of utterances the nominal has not moved from within the VP to Spec,Infl where it would receive nominative case. In these phrases the subject NP is in a postverbal position. As English is a head initial language, these phrases may indicate that the subject adopts the head-final value of Inuktitut. As these are the only examples of these types of phrases it is difficult to determine whether the subjects used this type of construction consistently.

(1) Sio: Whose mop is that?
    #10: [ignores question and turns to next picture]
        [pointing to flower] Is these the girl flower   [declarative]

(2) Sio: What happened to the King's food?
    #10: eat dog   [meaning 'the dog eats/ate it']

(3) Sio: What's the Mama Bird going to do with the worm?
    #14: eat them   [meaning 'they eat (it)' or 'feed them']

Example (3) may appear to have the subject remaining within the VP but the utterance may also be due to a misinterpretation of the verb 'eat' as having similar properties to the verb 'feed'. In Inuktitut, the verb stem for 'eat' is 'niri-' which can take either transitive or intransitive endings. To create an equivalent of the verb 'feed', an additional verbal morpheme is added to form 'niri-titsi-' ('to make eat') which takes an intransitive ending. Other subjects also had problems with this answer. Subject #6 uttered the word 'eat' and then gestured from the Mama bird to the babies. Subjects #11, #13 and #8 all gave the single word 'eat' as a response to that question.

Verbal Inflection

The utterances were analyzed for overt verbal inflections; past tense '-ed' or irregular verb forms and present tense 3rd person singular agreement '-s' . In tables 7a and 7b below, the distribution of main verbs with these inflections is shown.

Table 7a: Distribution of Past tense inflection in obligatory contexts

Subject Gr K	Session 1 (Oct '92) Past tense			Session 2 (Nov '92) Past tense		
	V+(ed)	V+(s)	(n)	V+(ed)	V+(s)	(n)
#6	100%	0%	3	0%	100%	1
#10	100%	0%	3	100%	0%	3
#11	100%	0%	1	100%	0%	1
#13						
#14	0%	100%	2			
#7						
#8						
#12				0%	100%	1
#15						

Subject Gr 1	Past tense		
	V+(ed)	V+(s)	(n)
#1	100%	0%	3
#2	57%	43%	7
#3	80%	20%	5
#4	100%	0%	1
#5	100%	0%	3

Table 7a shows that of those verbs produced in obligatory contexts for past tense, subjects #6, #10 and #13 almost always mark the verb accordingly. The only other two Kindergarten subjects who produced verbs in these contexts did not mark them for past tense which may indicate that they are using uninflected stem forms. The Grade 1 subjects generally mark the verb for past tense although there are a few utterances (by Subjects #2 and #3) where the verb is unmarked.

Table 7b: Distribution of Agreement inflection in obligatory contexts

Subject Gr K	Session 1 (Oct '92) Agreement			Session 2 (Nov '92) Agreement		
	+AGR	-AGR	(n)	+AGR	-AGR	(n)
*6	75%	25%	4	29%	71%	7
*10	80%	20%	5	60%	40%	5
*11	25%	75%	4			
*13	0%	100%	1	0%	100%	3
*14				0%	100%	1
*7						
*8						
*12						
*15						

Subject Gr i	Agreement		
	+AGR	-AGR	(n)
*1	80%	20%	5
*2	40%	60%	5
*3	67%	33%	3
*4	0%	100%	2
*5	0%	100%	2

Table 7b shows that all of the Kindergarten subjects produce a significant number of utterances containing verbs without the third person agreement morpheme in the appropriate contexts. The Grade 1 subjects also produce a significant number of verbs unmarked for agreement when it is obligatory. Given the highly inflected nature of Inuktitut verbal morphology, it is interesting to note that subjects often left the English verb unmarked for agreement even in cases where there is no overt subject (from Table 6 above). The utterances are similar to the 'telegraphic' style speech used by L1 learners of English in the initial learning stages.

Given that English morphology is quite limited it could be that there hasn't been enough input by this stage to trigger the appropriate use of Infl features. The use of inflection, either of present tense agreement or past tense, did not increase from one session to the next. Even the Grade 1 group occasionally left verbs uninflected.

Use of Auxiliaries

Table 8 shows the number of utterances which contained auxiliaries or modals both with and without negation in the appropriate order. There were few occurrences of theses

utterance types in the Kindergarten group and only by the subgroup #6,#10 and #11. All of the Grade 1 subjects produced utterances of this type.

Table 8: % utterances (n) containing Auxiliary/Modal (Neg) Verb

Subject Gr K	Session 1 (Oct '92)			Session 2 (Nov '92)		
	Aux/Mod	+Neg	(n)	Aux/Mod	+Neg	(n)
#6	15%	8%	13	7%		14
#10	13%		15	15%		13
#11		17%	6			1
#13			10			7
#14			2			3
#7			3			2
#8			0			1
#12			1			3
#15			0			2

Subject Gr 1	Aux/Mod	+Neg	(n)
#1	40%	20%	15
#2	17%	6%	18
#3	21%	14%	14
#4	33%	8%	12
#5	28%	22%	18

The only occurrence of an incorrect form with a Negative and no Auxiliary or main verb came from Subject #4.

#4: because he not wet

The fact that some subjects use auxiliaries and modals before the main verb indicates that they may have access to the IP structure in English. There is no significant increase in the use of these forms from one session to the next.

There were hardly any occurrences of infinitival 'to'. Two of the Grade 1 subjects produced phrases including 'to'.

#1: They're going to eat the worm
#1: Cause he has clothes on he won't try to get wet
#4: He haf (have) to clean it up.

Subject #6, of the Kindergarten group, produced two utterances where the infinitival head was required but he did not use it;

#6: he need eat
#6: my mom's going do it like that (looking at picture of mopping)

Subject #10 produced a number of constructions similar to Lakshmanan's subjects' 'for' phrases.

#10: Some boats for cleanup (Some boats to clean up - looking at the man mopping)
#10: because for apple for she's go (he's going to eat the apple) (*sess 1)
#10: Eating it... and for the king (the dog is eating it, and the king too)

Following Lakshmanan's analysis, the preposition 'for' could be in the head position of Infl in the place of 'to'. Subject #10 was the only one who used this strategy.

Acquisition of IP

Evidence from the distribution of subjects, verbal inflection, the use of auxiliaries and modals and occurrences of infinitival 'to' all provide limited support for access to the functional IP projection. The first subset of the main set of subjects (#6, #10 and #11) show use of overt subjects, tense and agreement inflections, and the use of auxiliaries and modals in the appropriate word order showing that they do have some access to the properties of Infl. However, they also produce a number of utterances without these features indicating an incomplete mastery of the properties. Subjects #13, #14 and #7 only occasionally produce utterances with the correct feature which may be due to the use of unanalyzed forms and not due to appropriate inflectional marking. Overall, their grammar seems to contain properties of lexical categories (specifically verbs) without using the features of Infl. There were not enough utterances for the remaining Kindergarten subjects to be able to determine what grammatical systems they had access to. The Grade 1 subjects show evidence of all of these Infl properties although null subjects are occasionally used.

4.1.5(3) Complementizer Phrase

Generally speaking, the phrases produced in response to the BSM items were not very complex and did not really 'require' complement clause structures. Only a couple of the subjects produced examples spontaneously which could have demonstrated the use of the CP projection.

#1:   I think he would give him away
#10: I know they're open

Otherwise there was no evidence for or against the properties of the CP projection from these sessions.

4.1.5 (4) BSM as elicitation method

As a method of eliciting language samples which revealed the use of functional categories, the BSM was useful in eliciting responses which demonstrated properties of DP and IP. Case marking, such as the Genitive case marker, word order, the presence of functional heads (such as determiners) and verbal inflections were all prompted by the test sessions. Functional heads like infinitival 'to' and complementizers were not prompted for specifically and if they occurred it was mostly by chance. Evidence for the CP projection was not prompted for. The BSM was also designed to elicit items with features that were not targeted in this study as properties of functional categories. Following Brown's (1973) description of morphemes acquired during the learning stages, a number of the BSM questions elicited plural markings and the '-ing' morpheme.

Although plural marking is not considered a property specifically related to functional categories the BSM sessions did elicit some results. Six elicitation items ask the child to identify in words an object on the page. All of the items pointed out were in the plural and the questions ask for a plural noun response (eg "What are these?, ...those?, ... these two things?"). As can be seen in Table 3 above, there was generally overall success in identifying objects by name. The only subjects who had difficulty were #12 and #15. However, all of the children alternated between using singular and plural forms of the answer and no-one used an article with the singular form. Subject #1 for example, was typical in this respect.

Sio: What are these?
#1: house
Sio: And what are these two things?
#1: nose
Sio: And these?
#1: doors

As all of the children produced this type of response I did not use these results in my analysis of Determiner use (Table 5 above). This response pattern may be due to a classroom task where children are asked to identify objects in a certain way or it could be due to confusion in number-marking as Inuktitut also has a dual marker while English does not. The fact that the children all alternate between plural and singular forms of the noun may indicate that they are using unanalyzed nominals for English. More data would be necessary to determine this.

The '-ing' morpheme, identified by Brown as the first in the series of morphemes acquired in first language acquisition of English, was also targeted in the BSM. The '-ing' morpheme may in fact be a property of an aspectual functional category (L.Travis, p.c.) but further syntactic analysis of this feature is necessary. Table 9 below shows the results for questions 10 and 19 of the BSM stimuli which prompted for this morpheme.

Table 9   " -ing" response to Questions 10 and 19

Subject Gr K	Session 1 (Oct '92) Q.10	Q.19	Session 2 (Nov '92) Q.10	Q.19
*6	[Inuktitut]	?	cleaning	[other]
*10	clean up *	dance *	chopping it	[other]
*11	?	dancing	mopping	dance *
*13	?	dress *	floor *	dress *
*14	?	?	mop them *	--
*7	?	[mimes]	?	[mimes]
*8	?	?	?	?
*12	?	[mimes]	--	[other]
*15	?	?	?	?

Subject Gr 1	Q.10	Q.19
*1	he's cleaning	singing
*2	washing it	[other]
*3	mopping	laughing
*4	cleaning up	dancing
*5	mopping it	she's dancin·

* unmarked for '-ing'
? "I don't know"
-- no answer

The table shows that the pattern of '-ing' use is very similar to use of the functional category features targeted above (compared, for example, to Table 4 indicating use of the possessive marking). Only the first subgroup of the Kindergarten subjects produced any forms of '-ing' verbs and even then it was not consistent for the same verbs from one session to the next. It appears that this inflection is not yet completely productive. Of the

remaining subjects, Subject #14 is the only one who provides a verbal answer but the inflection is missing. It is not possible to determine from just one reply whether '-ing' is available or not. All of the Grade 1 subjects supply an '-ing' form in the response.

The BSM data show that Kindergarten subjects #6, #10 and #11 had access to the properties but only used them some of the time. Subjects #13, 14 and #7 did not produce evidence of the properties of the functional categories but their responses were minimal. Subjects #8, #12 and #15 hardly spoke at all despite the colourful pictures and the series of questions. It is hard to determine the status of their grammar given the lack of utterances. The Grade 1 subjects demonstrated access to all of the properties targeted. For many of the utterances, the fact that the children used inflection some of the time but not others suggested that they may have been using unanalyzed items as if they were stem forms. As the number of responses was quite limited, the chance for the same word to occur more than once was very small and it was not possible to determine the status of these elements as inflected or unanalyzed. The small number of responses to the prompts in the task made it difficult to compare and analyze the utterances overall. Even though there were 25 questions, none of the children produced more than 18 utterances in reply while others wouldn't speak at all.

4.1.6 Subject-Auxiliary Inversion Task

The Subject-Auxiliary Inversion task described earlier was used to try and elicit evidence for use of the CP projection. The test was piloted on the Grade 1 group as a sort of pretest for the Kindergarten class. A few difficulties appeared, specifically with the longer prompt phrases (such as items 7, 8 and 28) which seemed difficult for the subject to remember in entirety. These were removed for the younger group.

As Table 10 shows, the results for the Inversion test were a little surprising. The Kindergarten group seemed unable to do the task at all while the Grade 1 subjects had very little trouble.

Table 10: % Questions formed in Sub-Aux Inversion Task

	English	Inuktitut	
Subject Gr K	% Question	% Question	
#6	0%	0%	
#10	0%	0%	(Panda)
#11	0%		
#13	0%		
#14	0%		
#7		0%	
#8	0%	83%	(Panda)
#12	0%		
#15	0%		

	English
Subject Gr 1	% Question
pilot	90%
pilot	84%
#1	87%
#2	85%
#3	80%
#5	88%

The results from the nine Kindergarten subjects are puzzling. Not one of them produced any type of question, nor did they seem to understand the nature of the task. After five Kindergarten subjects in a row failed to give any responses for the Inversion task, I tried the Wh- questions. This also proved unfruitful. My only replies were blank looks.

The remaining four Kindergarten subjects were presented with the English version of the test first and then the Inuktitut version. A native speaker of Inuktitut read the phrases, pointed to the picture and then told the child to ask Iguana, using the prompt phrase in a second attempt. After two subjects had the same blank looks for both the English and Inuktitut versions of the task, the native speaker suggested that the children may be shy or confused or that the Iguana puppet might be bothering or frightening them. As almost all of the children seemed quite taken with Iguana, petting him and feeding him the plastic bug, I'm not convinced that fear or shyness was the problem. However, for the remaining two subjects, we used the Panda puppet instead of the Iguana. One of these two subjects (#8) correctly responded to the Inuktitut stimuli. Note, however, that she was also the oldest of that subgroup. The (lack of) results from this task is more likely due to the

young age of the subjects and cognitive difficulties with the task. As a result there was no evidence for or against the availability of CP for the Kindergarten subjects.

The Grade 1 subjects showed little to no difficulty with the task. In almost all cases, this group produced replies with the correctly inverted auxiliary/modal which showed that the Comp position of the CP projection was available as a landing site. In a few circumstances the auxiliary/modal was present both before the phrasal subject and immediately following it. For example:

Sio: Ask Iguana if the girl is happy. (Question 23)

#2: Is the girl is happy?
#5: Is the girl is happy?

This kind of error has been observed for L1 learners (Crain & Nakayama, 1987) and my pilot subjects also did this occasionally. This always occurred with the same elicitation sentences (#s 5, 6,8,19,23) which suggests that items may have been confusing for other reasons. However, the overall results suggest that the inversion task itself had been mastered without great difficulty. Of the Grade 1 group the one subject who did not produce the correct Wh- question forms produced alternate question forms using Sub-Aux Inversion with 'do'-support as in:

Sio: I think Iguana wants to play with someone? Ask him who...
#2: Do you want to play with someone?

Sio: I think Iguana feels very cold here. Let's see when he wants to go back to Montreal.
Ask him ...
#2: Do you want to go back to Montreal?

Of the subjects who successfully used Wh-words (#1, #3,#5) in the Wh-part of the task, their replies show evidence for use of the Spec,Comp position as a landing site for the Wh-element. No-one produced a question form with the Wh-word in situ. This task showed that all of the Grade 1 subjects had access to the CP projection.

4.1.6(1) Sub-Aux Inversion as elicitation method

This task was only successful in showing use of the CP projection with the older children in the study. The very nature of the task seemed to puzzle the younger subjects. They invariably chose to pet the puppet and feed it rather than ask it questions. This indicates that the lack of results could be due to cognitive aspects of the task and not due to linguistic difficulties in forming questions.

4.1.8 General Discussion

As the results in the tables show, the number of examples of each functional category feature are limited. The elicitation materials produced a set of comparable responses for all the subjects but the number of items elicited was relatively small. Further division of the utterances into those which showed specific features reduced the number even more. While this restricted the number of responses in one way, the overall reticence of the children limited it further.

This reticence may be indicative of cultural differences in how children respond. Crago's work with Inuit in Northern Quebec led her to make the following observation "Traditionally Inuit children have not been encouraged to participate in conversation with the adults" (1988:214). She extends her observations to how this may affect data-collecting sessions such as the ones used here. "Verbal expressive behaviour in Inuit children has a different role than it does in white middle-class North American culture. Appropriate comprehension and listening skills are more important to Inuit children than appropriate talking is....Since children are not expected to be involved in extended conversations with adults, language samples that are elicited by an adult may not be representative of a child's abilities. Better results might be obtained from sampling children's language in situations where they talk and play with each other" (Crago,1988: 248). As Crago's observations were made regarding use of the first language in a home setting, the situation may be even more pronounced for interaction in the second language.

Taking Crago's remarks into consideration and given the limited number of elicited responses from each child, the results from these testing sessions cannot be indicative of the full range of linguistic abilities of the subjects. They should be taken as general indications of the kinds of properties of the L2 they may have mastered at this time.

The BSM and the Subject-Auxiliary Inversion task were both partially successful in eliciting the relevant functional category features. Some subjects did produce evidence for the functional categories DP and IP in the BSM sessions and evidence for CP in the Inversion task. However, several of the subjects did not produce adequate responses to determine whether they had access to the relevant categories or not. In this respect, the methodologies failed to elicit enough data.

For future studies in this context, elicitation materials such as the BSM could be developed so that dialogue is prompted between children instead of with an adult investigator. Although this would be a more natural situation for verbal interaction, it could also prove problematic in ensuring that the children spoke in the second language rather than the first language. Studies of this type could be possible by pairing children from English language and Inuktitut language classes for data-collecting sessions. The Inversion task developed for this study proved unfruitful in eliciting items from the younger subjects. For this type of task (using puppets or other characters) further pre-testing on younger first-language speakers is indicated. This would rule out age-related cognitive difficulties.

The testing sessions for the Kindergarten group were conducted one month apart and there was no significant change in the properties of the utterances over this time. One month may have been insufficient to show any relevant changes, Future studies should possibly collect data from the subjects at greater intervals, such as three months, over the course of a longer period of time, the entire school year for example. This would allow for a more extensive evaluation of second language development in the first year of school.

4.2 Conclusion

The results of the data analysis show that evidence of the use of functional categories in English was only partially exhibited by the Kindergarten subjects. Only the first subgroup (#6,#10 and #11) showed access to the properties of DP and IP although they also produced utterances lacking these functional categories. The results from the next subgroup (#13,#14 and #7) showed little to no access to these properties. The final subgroup (#8,#12 and#15) did not produce enough responses to determine either way. None of the Kindergarten subjects showed access to the CP projection except for a single relative clause utterance by Subject #10. (In this case the complementizer 'that' was null.) This pattern of access to functional category properties did not change or develop over the time period between the two sessions despite a month's worth of language input in the school environment.

My initial hypothesis predicted a development in the use of functional category properties over the two sessions. Instead, the initial division into subgroups based on complexity of phrases and access to the relevant properties remained stable between the two test sessions. The first group of Kindergarten students already seems to have access to properties of the DP and IP functional categories of English, while the other groups seem not to have reached that stage and use mainly lexical thematic-type utterances. In the case of this study there presumably had not yet been enough input or enough time for changes in the subject's grammar to appear from one session to the next.

The Grade 1 subjects exhibited all of the properties of functional categories analyzed in the data. They showed access to the DP structure by producing Genitive marked possessor nominals and pronominals and by producing nominals with determiners in the appropriate contexts. Access to the IP structure was shown by the use of overt subjects in the correct word-order (preceding auxiliary and modal verbs in Infl, and the main verb in the VP), by the use of tense and agreement inflections on verbs, the use of auxiliaries and modals, and correct ordering of auxiliaries and modals with respect to

negation. Evidence for access to the CP projection was shown by correct Subject/Auxiliary Inversion in Yes/No question formation and for the movement of Wh-words into Spec,CP. Comparing these subjects to the Kindergarten subjects indicates that a significant development in the linguistic structures used by the students occurs during the first year of school. Investigation over a longer period of time would be necessary to determine when these properties are triggered.

The data presented here does not contradict Eubank's (1992) argument that functional categories are present from the outset but that their properties are not realized until the relevant morphology is acquired. English morphology is relatively minimal compared with Inuktitut and it could be that at the early stages of acquisition there is insufficient input to trigger use of the relevant functional category properties of English. If the subjects are using unanalyzed elements, then this would further support the analysis that they have not yet acquired English morphology. Further production data and repetition tasks could help determine whether this is the case.

There remains the question of whether the subjects have direct access to UG during second language acquisition of English or if they adopt the values of their first language as the initial state. There is not enough data from this study to determine either way. However all of the results are consistent with the 'direct access to UG' hypothesis. All of the subjects who produce multiple word phrases seem to have determined that only the DP head can assign Genitive case. In the L1, Genitive case can also be assigned by the IP head. Every subject who produced multiple-word phrases set the headedness parameter correctly for English (head initial) with two exceptions. Two subjects produced phrases with VP-internal subjects and used the head-final value of the L1. These were the only examples of incorrect headedness. The main characteristic of the L1 which appears in the L2 is the use of null subjects. This indicates that the subjects incorrectly assume English Infl to license null subjects at least some of the time or they do not yet have access to Infl.. The use of null subjects is frequent in the early stages of English first language acquisition,

as was discussed in Section 3. In order to determine whether this is feature is transferred from the L1 or is the result of other factors (such as the lack of the appropriate trigger in the input), it would be necessary to compare the degree of use of null subjects in the children's first language, Inuktitut, with the second language and with English speaking children of the same ages and 'levels of linguistic sophistication' (as suggested by Valian, 1991).

The results of this pilot study indicate that the properties of functional categories have emerged in the English second language of native Inuktitut speakers by the end of their Kindergarten year in school. Data were insufficient to indicate when the properties begin to emerge or what input determines the appearance of these properties at the beginning stages. Further studies in this area should span a longer time period and adapt the elicitation methods more specifically to the age of the children and the cultural context.

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BILINGUAL SYNTAX MEASURE

MEDIDA de SINTAXIS BILINGÜE
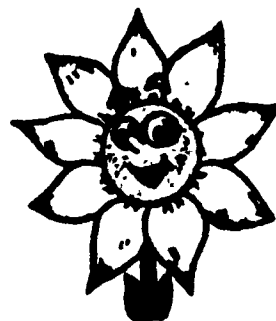
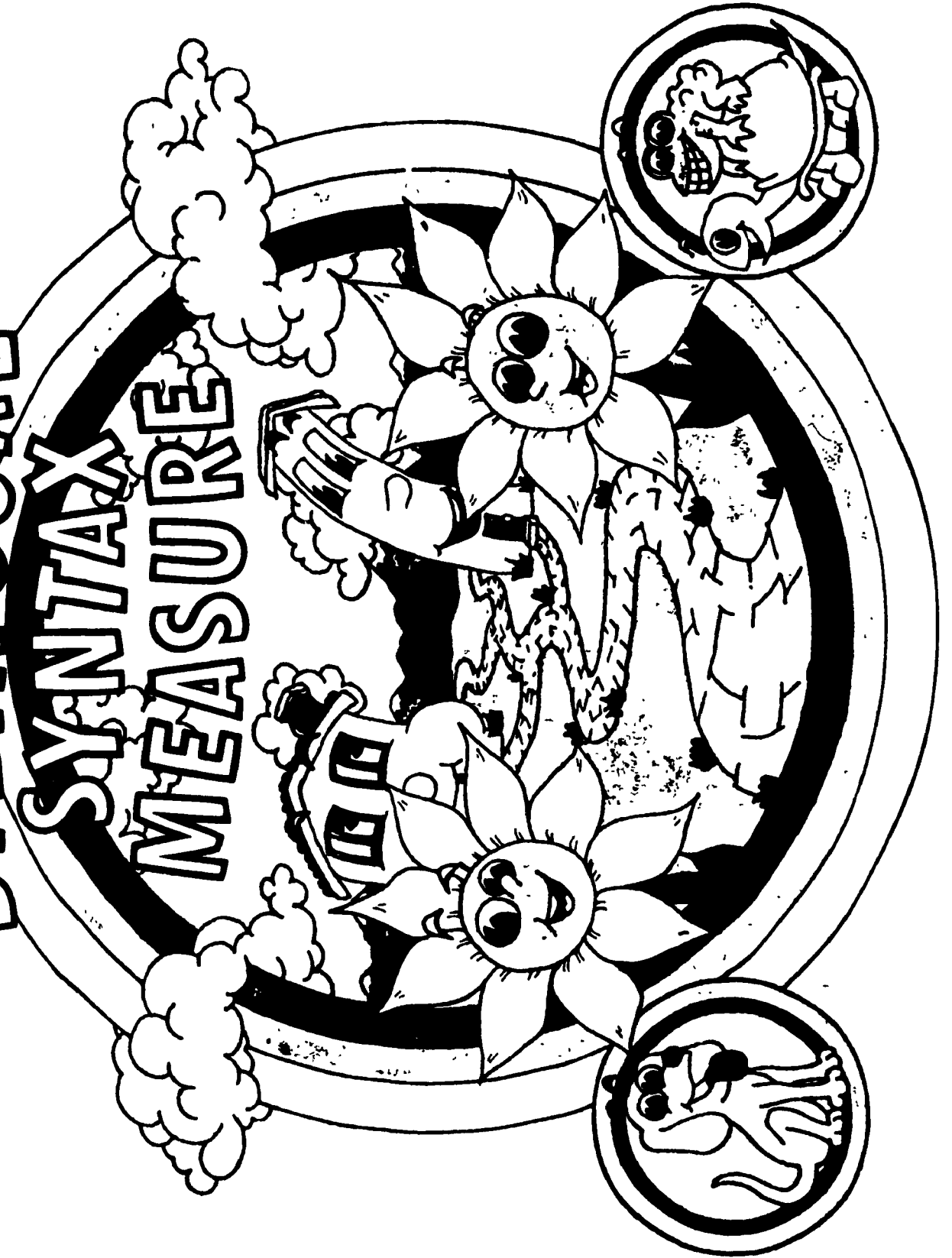**Marina K. Burt**

Heidi C. Dulay
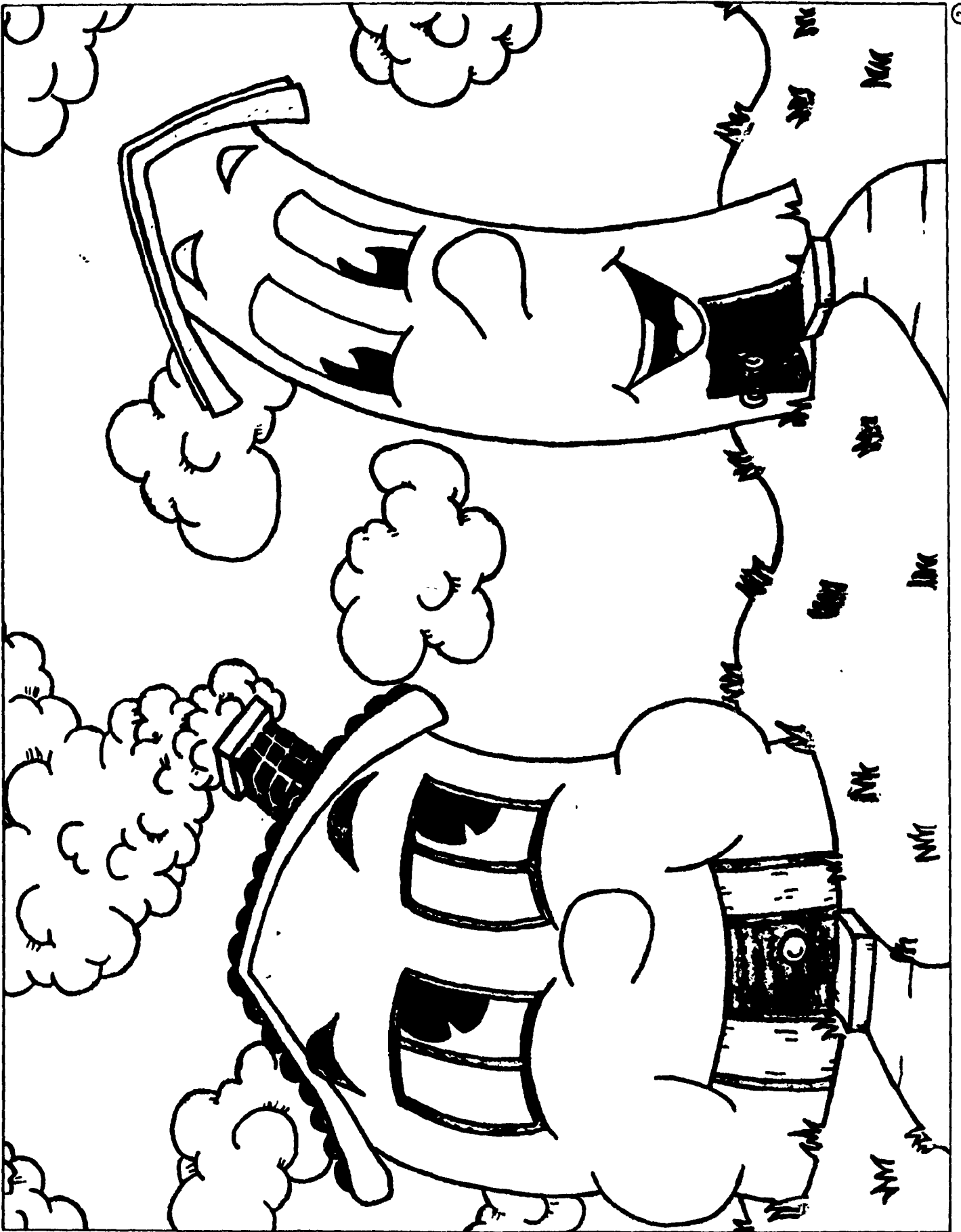
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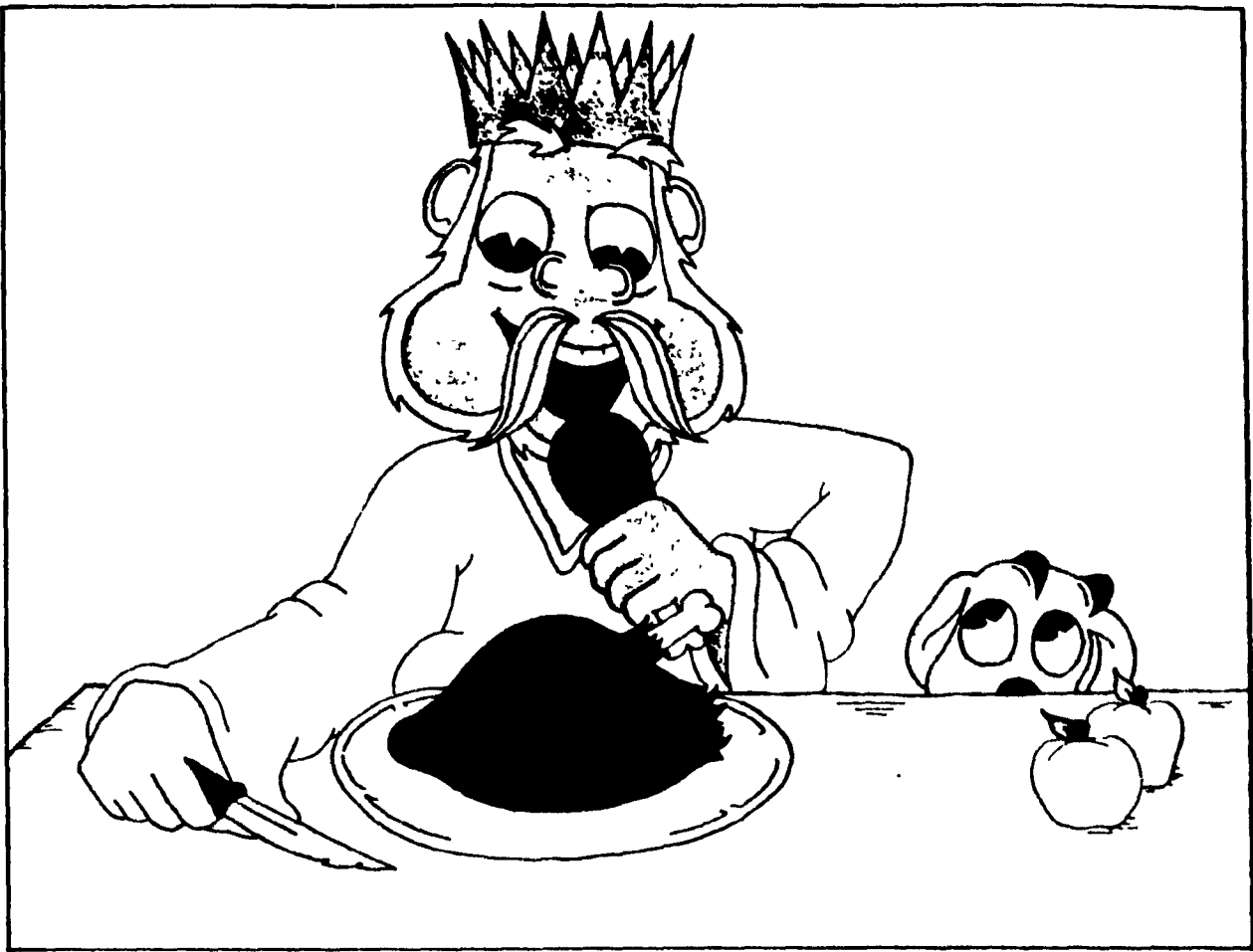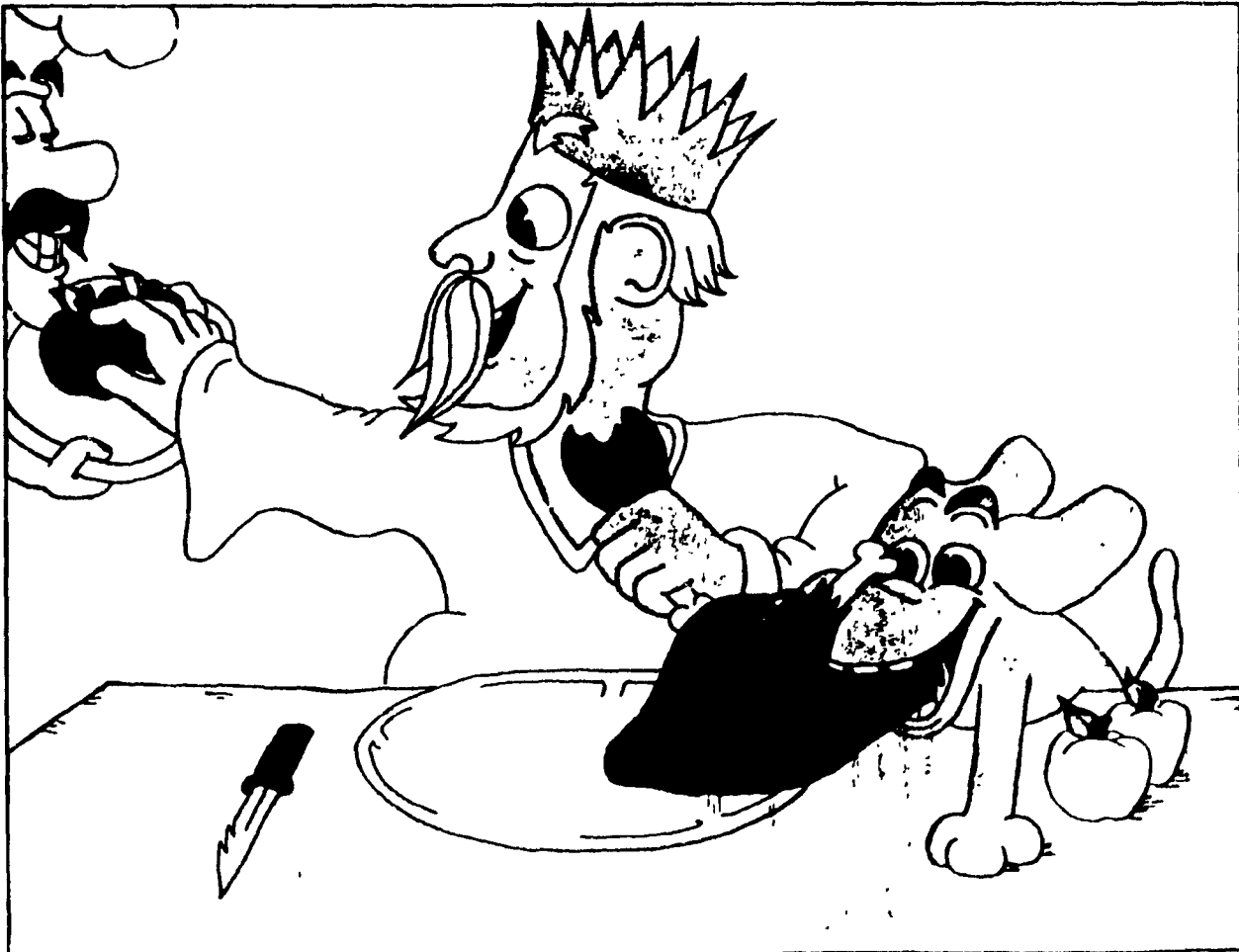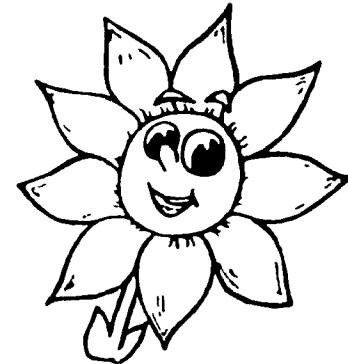**BILINGUAL SYNTAX MEASURE**

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7

BILINGUAL SYNTAX MEASURE

Marina K. Burt

Heidi C. Dulay

Eduardo Hernández Ch.

CHILD RESPONSE BOOKLET

THIS BOOKLET CONTAINS ALL THE SPECIFIC DIRECTIONS AND QUESTIONS FOR ADMINISTERING THE BSM-E.

Please fill in this information before administering the BSM-E.

CHILD'S NAME _____

AGE: years _____ months _____ BOY _____ GIRL _____

TEACHER _____ GRADE _____

SCHOOL _____ CITY _____

DATE _____ EXAMINER _____

CHILD'S ENGLISH DIALECT (Optional) _____

SCORED AGAINST: STANDARD ENGLISH ___ OTHER _____

TEST RESULTS: Check appropriate Level below:

LEVEL: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___

NOTES AND OBSERVATIONS: (retest, special diagnosis, etc.)

_____

_____

_____

HBJ HARCOURT BRACE JOVANOVICH, INC.

The administration of the BSM is like chatting with a child about some pleasant pictures. To cue the child that the "chat" is to be in English, speak only English with the child before and during the administration of the BSM-E A good way to start is to say: "Hi, (child's name). Let's look at some pictures." Let the child see the cover of the Picture Booklet. To further establish rapport, it may be necessary to chat a little before starting. Use the cover of the Picture Booklet to "break the ice." Simple comments or questions about the cover such as "Isn't that a fat house!" or "Do you see a flower?" usually put the child at ease.

Instructions to the examiner are always in green. Questions to ask the child are always in black. When the examiner must point to some part of a picture, instructions are given above that question. Record responses <u>only</u> where lines are provided.

Open the Picture Booklet to the first picture and begin the BSM-E.

Show the child PICTURE 1 only Then ask questions a through e in order

PRELIMINARY QUESTIONS (Do not record)

a   **DO YOU SEE A FAT MAN? . . . SHOW HIM TO ME.**
b. **AND SHOW ME THE SKINNY MAN.**
c   **AND THE BABY BIRDS UP IN THE TREE?**

d   Point to FLOWERS
    AND WHAT ARE THOSE?
e   Point to SANDWICHES
    AND THOSE?

TEST QUESTIONS (Record responses on lines provided.)

1   Point to BABY BIRDS
    WHAT ARE THOSE? _____

1 ◯

2. Point to MAMA BIRD and WORM (Do <u>not</u> record response)
    **WHAT'S THE MAMA BIRD
    GOING TO DO WITH THE
    WORM?**

3   Point to BABY BIRDS
    WHY DO THEY WANT FOOD? _____

3. ◯

4   Point to FAT MAN
    WHY IS HE <u>SO</u> FAT? _____

2

5 Point to SKINNY MAN
WHY IS HE SO SKINNY?

_____

☐ BSM E discontinued because _____

Otherwise, continue the BSM-E and say. **LET'S LOOK AT ANOTHER PICTURE.**

Show the child PICTURES 1 and 2 TOGETHER.

PRELIMINARY QUESTIONS (Do not record.)

a SHOW ME THE FAT HOUSE.   **b AND THE SKINNY HOUSE?**   **c WHERE ARE THE WINDOWS?**   **d AND THE DOORS?**

TEST QUESTIONS (Record responses on lines provided)

6 Point to BOTH HOUSES using
whole hand to point
WHAT ARE THESE?

_____   6 ☐

7 Point to NOSES ON BOTH
HOUSES AT ONCE
**AND WHAT ARE THESE
TWO THINGS?**

_____   7. ☐

8 Point to DOORS OF BOTH
HOUSES AT ONCE
AND THESE?

_____   8 ◯

9 Point to FAT MAN and FAT
HOUSE
WHY DOES HE LIVE HERE?

_____   9. ◯

3

Now turn ⬤ e next picture and say: **HERE'S ANOTHER PICTURE!**

Show the child PICTURE 3 ONLY

PRELIMINARY QUESTION (Do not record.)

a. **WHERE ARE THE FISH?**   b. **AND THE MOP?**   c. **AND WHERE ARE THE MAN'S SHOES?**

TEST QUESTIONS (Record responses on lines provided.)

10 Point to MAN   (Do not record response.)
    **WHAT'S HE DOING TO THE
    FLOOR?**

11. **WHY IS HE DOING THAT?**   _____   11. ◯

12 Point to MAN'S SHOES   (Do not record response.)
    **WHAT DID HE DO WITH HIS
    SHOES?**

13. **WHAT WOULD HAVE
    HAPPENED TO HIS SHOES . . .
    pause . . . IF HE HADN'T
    TAKEN THEM OFF?**   _____   13 ☐

14. Point to EYES OF BOTH GREEN FISH
    **WHY DO YOU THINK THEIR
    EYES ARE CLOSED?**   _____   14. ◯

15. Point to EYES OF BOTH RED FISH
    **AND WHY DO YOU THINK
    THEIR EYES ARE OPEN?**   _____   15. ◯

4

16 a. ARE THE FISH WET?
    b. HOW COME? (WHY?)

_____

16. ◯

17. a. IS THE MAN **ALL** WET?
    b. HOW COME? (WHY?)

_____

17. ◯

18. Point to MOP
    TELL ME, WHOSE MOP IS
    THAT? (If child just points,
    say "I didn't hear you.")

_____

18. ☐

Now say to the child: HERE COMES ANOTHER PICTURE!   And turn to the next picture.   Show the child PICTURE 4 ONLY.

TEST QUESTIONS (Record responses on lines provided.)

19. a. Point to GIRL
       WHAT'S THE GIRL DOING?
    b DO YOU THINK SHE'S
       HAPPY?   (Do **not** record response.)
    c HOW COME? (WHY?)   (Do **not** record response.)

19a. ◯

20. Point to GIRL'S FLOWER
    WHOSE FLOWER IS
    THAT? (If child just points,
    say "I didn't hear you.")

_____

20 ☐

Now say to the child: LET'S LOOK AT THE LAST PICTURES, and turn to the next pictures.   Show the child PICTURES 5, 6, and 7 TOGETHER.

a. Point to PICTURE 5
   WHERE IS THE KING IN THIS PICTURE?

b. Point to PICTURE 6
   WHERE'S THE DOG IN THIS PICTURE?

c. Point to PICTURE 7
   AND WHERE'S THE KING IN THIS PICTURE?

TEST QUESTIONS (Record responses on lines provided.)

21. Point to DOG (PICTURE 5)   (Do not record response.)
    **WHY IS THE DOG LOOKING
    AT THE KING?**

22. Point to PLATE (PICTURE 7)
    **WHAT HAPPENED TO THE
    KING'S FOOD?**   _____ _____ 22. ☐

23. **WHAT WOULD HAVE
    HAPPENED IF THE DOG
    HADN'T EATEN THE FOOD?**   _____ 23. ☐

24. Point to APPLE ON FLOOR
    (PICTURE 7)
    **WHAT HAPPENED TO THAT
    APPLE?**   _____ 24. ☐

25. **WHY DID IT FALL DOWN?**   (Do not record response.)

Now say to the child **THAT'S ALL THERE IS. DID YOU LIKE THAT? . . . I DID TOO . . . THANK YOU,** (child's name)

Appendix II
Subject-Auxiliary Inversion Task

ASK IGUANA...

1. if the blue man is fat

3. if the man has something to eat

4. if they were eating lunch together

5. if the baby birds in the tree are hungry

6. if the Mama bird will feed them soon

7. if the fat man can feed the baby birds with his sandwiches

8. if the turtle can climb up the tree to look at the birds

10. if the flowers look pretty

11. if they are smiling

PIK 2
19. if the houses have funny noses

20. if they have been talking to each other

PIK 3
23. if the girl is happy

24. if she's been dancing for a long time

25. if she's got something in her hand

26. if it's a flower

28. if she will give the flower to the fat man

29. if the girl can see where she's going

WII-Questions
I think Iguana is hungry. Let's see what he wants to eat.
Ask him ...

I think Iguana wants to play with someone?
Ask him who...

I think Iguana feels very cold here. Let's see when he wants to
go back to Montreal. Ask him ...

Appendix III
Inuktitut Question-forming Task

IGUANA APERIGU...   "Ask Iguana (if)..."

1. Una quinijuq   "This one is fat"

2. Una nirijuq   "This one eats"

3. Kupanuak kaaktuq   "The birds are hungry"

4. Anaanangat nirititchiatuktuq   "Their mother feeds them"

5. Piujuq pirusia   "The flower is pretty"

6. Igluk qinganga ijurnaqtuq   "The houses noses are funny"

7. Ujalimajut   "(They are) talking"

8. Arna quviasuqtuq   "The woman is happy"

9. Arna ijingi amangituq   "The woman doesn't have her eyes open"