A MICROANALYTIC ANALYSIS OF CAREGIVER-CHILD INTERACTION: AN INUIT EXAMPLE

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August, 1993

A Thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements of the degree of Master of Science.

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A microanalytic analysis of Inuit caregiver-child interaction.

ABSTRACT

The present study is a microanalytic analysis of the communicative interaction between Inuit caregivers and their children at 16 and 20 months of age. The caregivers in the study included an older more traditional mother, a younger less traditional mother, and a teenage sibling caregiver. Videotaped samples of naturalistic interaction between the Inuit caregivers and children were coded for communicative intent using the Inventory of Communicative Acts - Abridged (Ninio, Wheeler, Snow, Pan, & Rollins, 1991). Preliminary comparisons between the Inuit data and the results of studies of white middle-class caregiver-child interaction were also assessed. Results of the study demonstrate that there are differences in caregiver-child interaction within the Inuit culture and between the Inuit and the white-middle class culture. The implications of these findings for interactionist theories of language acquisition such as Bruner's Language Acquisition Support System (1981, 1985) are discussed.

RÉSUMÉ

La présente étude constitue une analyse microanalytique de l'interaction communicative entre des donneurs de soins inuits et leurs enfants lorsque ces derniers sont agés de 16 mois et de 20 mois. Les donneurs de soins dans cette étude sont une mère plus agée et plus traditionnelle, une mère plus jeune et moins traditionnelle, ainsi qu'une soeur adolescente. Des échantillons vidéos d'interaction naturelle entre les donneurs de soins inuits et les enfants ont été codés quant à l'intention de communication en utilisant le "Inventory of Communicative Acts-Abridged" (Ninio, Wheeler, Snow, Pan, & Rollins, 1991). Des comparaisons préalables entre les données inuits et les résultats d'études sur l'interaction donneur de soins-enfant dans des familles blanches de classe moyenne ont aussi été évalués. Les résultats de la présente étude montrent qu'il y a des différences dans l'interaction donneur de soins-enfant au sein de la culture inuit, ainsi qu'entre la culture inuit et la culture blanche de classe moyenne. Les implications de ces découvertes pour les théories interactionnelles de l'acquisition du langage, telles que le système de soutien de l'acquisition du langage de Bruner (1981, 1985), sont discutées.

ACKNOWLEDGEMENTS

The author would like to thank a number of people who contributed to this thesis:

The Graduate Faculty of McGill University, who funded this research.

My supervisor, Martha Crago, who not only shared with me her data and expertise on Inuit caregiver-child interaction, but who provided continual encouragement and guidance that has been invaluable to this thesis and my academic development.

Elizabeth Cole, who gave valuable comments in shaping this project and in revising the manuscript.

Rachel Mayberry, who provided suggestions regarding the design of the study and encouraged me to "dig into" the data.

Don Doehring, who provided invaluable advice regarding the analysis of the data and manuscript revision.

Shanley Allen, who generously gave not only her time to help with revising and analyzing the transcripts, but also her support and friendship.

Alice Eriks-Brophy, who taught me to use the CLAN programs for analyzing the transcripts and provided encouragement and companionship throughout the project.

Billy Nowkawalk, who had the difficult job of revising the transcripts.

Annie Delyfer, who did the translation of the abstract.

Barbara Pan and Catherine Snow, who generously shared with me their knowledge of the INCA-A and the results of their studies of white middle-class caregiver-child interaction.

My parents, Verna and Jim Brown, who have encouraged me in all of my pursuits (yes, I finished my thesis!).

And especially my husband, James Eyamie, who has been a loving companion and an invaluable research assistant during this project.

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Chapter 1

INTRODUCTION

This thesis is concerned with two different approaches to the study of language, psycholinguistics and language socialization. Psycholinguistics refers to the study of how individuals comprehend, process, produce, and acquire language (Carroll, 1986). In contrast, language socialization concerns the manner in which "children and other novices in society acquire tacit knowledge of principles of social order and systems of beliefs (ethnotheories) through exposure to and participation in language-mediated interactions" (Ochs, 1986, p. 2).

In addition to the differences in theoretical perspective between psycholinguistics and language socialization, there are marked differences in the methodologies they characteristically employ. Psycholinguistic research with children, historically, has involved analysis of spontaneous language use and observation of elicited verbal and/or nonverbal behaviour, experimentally in laboratories or in the home setting (Ochs, 1979). For the most part, such psycholinguistic research has focused on first-born children in European or North American middle-class homes in which the primary caregiver of the child is the mother (Ochs & Schieffelin, 1984;

Rogoff, 1990).

Language socialization research is characterized by a different set of methodologies encompassed by the term ethnography. Ethnography is a qualitative research method that produces a detailed description and interpretation of the phenomenon being studied (Doehring, 1988). It is implicit in ethnographic research that the interpretations made by the researcher reflect the "native point of view" (Marcus & Fischer, 1986, p. 141) and not that of the observer. Data are collected in a variety of contexts by participant observation, interviewing, and audio/videotape recordings (Crago & Cole, 1991). Unlike psycholinguistic research, language socialization studies have been conducted in a wide variety of cultures in which different languages are spoken, the social environment in which the child is reared takes various forms, and the beliefs regarding the organization of conversational discourse are diverse.

The present work is an observational psycholinguistic study that entails the reanalysis of a subset of ethnographic data from a language socialization study (Crago, 1988). As such, this thesis will address certain methodological issues such as whether ethnographic data, when analyzed in a more quantitative manner, continue to provide the same portrait of the behaviour under investigation; whether taxonomies and research designs used for investigating behaviours exhibited by European and North

American children and their caregivers are appropriate for cross-cultural studies; and what effect the context of data collection has on the results obtained by these tools.

The purpose of the thesis is three-fold: first, to investigate the communicative intentions expressed in the early gestures, vocalizations, and verbalizations of two Inuit children. Second, to contrast the intentions expressed in the utterances of a younger versus an older Inuit mother. Third, to provide a preliminary comparison of caregiver-child interaction in Inuit homes and in white middle-class homes by using data from this study and from Ninio and Snow (in preparation) and Pan and Snow (1990).

Three hypotheses are central to the thesis. First, it is hypothesized that the nature of the children's early communicative attempts will be similar in the Inuit culture and in the white middle-class culture. This hypothesis is based upon the theory that there are "innate communicative intentions that govern a great deal of the child's communication during the early acquisition of language" (Bruner, 1981, p.162). If so, the Inuit and white middle-class children should demonstrate similarities in the nature of the communicative functions they express despite documented differences in their language and cultural language socialization practices (Crago, 1988).

The second hypothesis is that there will be differences between the communicative functions expressed by young Inuit

caregivers in nuclear families and those expressed by older caregivers living in more traditional extended family homes that include sibling caregivers. This assumption is based on the ethnographic description of communicative interaction between young Inuit children and their various caregivers by Crago, Annahatak, Ningiuruvik (1993). Crago et al. reported that there are differences in the character of caregiving and caregiver-child interaction displayed by traditional versus less traditional Inuit mothers. It is hypothesized that differences will also be apparent when analyzing the function of the utterances that these caregivers direct to their children.

The third hypothesis is that there will be differences with regard to the communicative interactions of the Inuit caregivers when compared to white middle-class caregivers. Various aspects of communication in the Inuit culture are strikingly different from the portrait presented by the psycholinguistic research concerning caregiver-child interaction (Crago et al., 1993; Eriks-Brophy & Crago, in press). It is anticipated, then, that similar incongruities between these two cultures will be manifested when communicative interaction is examined in a more microanalytic manner. This assumption is supported by the findings that have been reported in other studies of cross-cultural language socialization (Crago & Cole, 1991; Demuth, 1986; Heath, 1983, 1986, 1990; Ochs, 1988; Schieffelin,

1990; Scollon, 1982; Watson-Gegeo & Gegeo, 1986).

The thesis begins with a review of the literature on intentional communication in Chapter 2. The review consists of an overview of "speech act theory" and its impact on the study of language including the reasons for classifying communicative intentions and a discussion of some of the schema that have been employed for this purpose. This first portion of the literature review ends with an examination of the results of various studies that have been conducted on the acquisition of intentionality.

The literature review continues in the third chapter with an examination of the theoretical framework underlying social interaction theories of language acquisition. Bruner's "Language Acquisition Support System" (1981, 1983, 1985) is summarized as an example of this view of language development. The communicative modifications demonstrated by white middle-class mothers when interacting with their children are also described. The third chapter concludes with a discussion of the findings of cross-cultural studies of child language.

In the fourth chapter the methods used in the present study are described, including an explanation of the coding system employed and the data analysis procedures. The results and discussion of the study are presented in the two final chapters.

Chapter 2

INTENTIONAL COMMUNICATION

Since the late 1970s, one of the major trends in the study of child language development has been an interest in the relationship between language and context. This line of research attempts to integrate our existing knowledge of phonology, syntax, and semantics into a broader framework of communicative competence (Bates, 1976; Hymes, 1972; Ochs and Schieffelin, 1979). In the traditional view of linguistic competence, the focus was on the speaker/hearer's knowledge of the structural rules of grammar governing language. However, Hymes (1972) stated that this view was too narrow and needed to include consideration of the rules for the appropriate use of linguistic utterances in their context. According to Hymes (1972) a fuller account of an individual's communicative competence would consider what the language user knows about "when to speak, when not, and as to what to talk about with whom, when, where, and in what manner" (p. 277).

The area of language study concerned with communicative competence is pragmatics. As defined by Bates (1976), the pragmatics of language are the "rules governing the use of language in context" (p.420). Topics of pragmatic research include the study of the effects of contextual variables,

including cultural variables, on language use; the study of discourse phenomena such as requests for clarification, repair strategies, and turn-taking behaviours; and the study of communicative intentions. The focus of this thesis will be on the latter topic, the study of communicative intentions.

This chapter is concerned with the basic tenets of speech act theory that provide the framework for the study of communicative intention, the reasons why the pursuit of such research is important, and a brief overview of the literature regarding the development of intentionality in children.

Communicative Intent and Speech Act Theory

The framework for the study of the development of intentional communication has its origin in the philosophy of language, specifically, in the "speech act theory" of Austin (1962). This theory is based on the idea that sentences cannot be understood in terms of their propositional content alone. Austin (1962) proposed that there are three "forces" to any sentence: locutionary, illocutionary, and perlocutionary. The locutionary force refers to the conventional meaning of the sounds and propositions in the utterance. In contrast, the illocutionary component of the act is the conventional

social act that is taking place when the sentence is uttered, as perceived by both the speaker and the hearer. Finally, the perlocutionary force refers to the effect or outcome of the sentence, whether it is intentional or unintentional. Although Austin referred to all three of these components as "speech acts", this term is now generally used in reference to the illocutionary force of an utterance (Bates, 1976). This more limited definition of "speech act" might be considered synonymous with such terms as "communicative intention", "communicative function", and "pragmatic function".

Searle (1965) further elaborated Austin's "speech act theory" by distinguishing four types of speech acts: utterance acts or the uttering of words; propositional acts or the conceptual content of the utterance that Searle defined as referring and predicating; illocutionary acts or how the utterance is to be perceived (eg. as a statement, question, promise, etc.); and perlocutionary acts or the effects that speech acts have on listeners in modifying their behaviours or beliefs. It should be noted that any speech act must include at least the first three of these components, the utterance, the propositional meaning, and the intended force. However, the speech act may or may not produce the intended effect on the listener.

Although Austin's original "speech act theory" was limited in scope to the analysis of verbal utterances, it is

now widely accepted that a communicative intention need not be limited in form or content. For instance, Searle (1969) postulated that speech acts may be expressed verbally, by conventional gesture, or by writing. Along with the suggestion that intentional communication begins before the emergence of syntax or morphology (Bates, Camaioni, & Volterra, 1975; Bateson, 1975; Bruner, 1975; Dore 1973, 1974, 1975; Ninio & Snow, 1988; Snow, 1977a, 1983; Sugarman, 1973) came the notion that communicative intention could be manifest in the form of gesture, eye contact, and prelinguistic vocalizations, as well as verbal speech. Roth and Spekman (1984) added to this list possible paralinguistic means of expressing meaning such as stress, duration, intonation, pitch, or intensity.

Classification of Communicative Intent

Why Classify Communicative Intentions?

As a result of the theoretical work by Austin (1962) and Searle (1969), it is now generally recognized that the structural analyses of children's language need to be supplemented by pragmatic analyses (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979; Ninio, Snow, Pan, & Rollins, 1990; Prutting, 1982). One type of pragmatic analysis is the study of the functional aspects of communication also known as communicative intention. There

are three central reasons for the classification of communicative intentions: descriptive, theoretical, and clinical.

Descriptive Reasons

The descriptive purpose for classifying communicative intentions is based on observations that the earliest stage of language development is pragmatic in nature (Bates, et al., 1979; Carpenter, Mastergeorge, & Coggins, 1983; Chapman, 1981; Dore, 1974, 1975; Greenfield & Smith, 1976; Halliday, 1975; Ninio, 1985, 1986; Roth & Spekman, 1984; Wetherby, Cain, Yonclas, & Walker, 1989). Before children demonstrate any use of syntax or morphology, they display communicative turntaking skills and the ability to communicate using gestures, vocalizations, and early words. To provide a thorough description of the communicative abilities of young children, then, it is necessary to classify the communicative intentions that they express in their prelinguistic stage of language development.

Theoretical Reasons

There are also theoretical reasons for classifying communicative intent. A number of different theories postulate that pragmatic skills are central to the acquisition of grammar (Bates & MacWhinney, 1982; Bruner, 1978; Halliday, 1975; Ninio & Snow, 1988; Tough, 1977). In order to test these hypotheses regarding the pragmatic basis of language acquisition, it is necessary to carefully

examine the communicative intentions expressed by children. To do so, classification schema for communicative intent are needed.

Clinical Reasons

Classification schema have also become important for the assessment of pragmatic abilities in children who have communication disorders. Various patterns of differences or deficits in the acquisition of communicative intentionality have been observed in individuals displaying a variety of language and intellectual disorders (Prizant & Duchan, 1981; Prizant & Rydell, 1984; Rowan, Leonard, Chapman, & Weiss, 1983; Snyder, 1978; Tager-Flusberg & Keenan, 1987; Wetherby & Prutting, 1984). A comparison of such disordered forms to those found in normal children is important both theoretically and diagnostically. The diagnostic ramifications of the acquisition of communicative intentionality have become increasingly important with the passage of the American PL 99-457 that extends the provision of clinical services to children from birth to three years. Although no such law has been formally adopted in Canada at this point, the American law has nonetheless had repercussions for Canadian speech-language pathologists. Since the prelinguistic pragmatic abilities of children of this age group are central to their communication, it is important to have some means of assessing such early behaviours. Therefore, several attempts have been made to

categorize the speech acts or communicative intents that are expressed by young children in order to provide a normative basis of comparison on which formal or informal diagnostic tools can be based.

Taxonomies of Communicative Intentions

As a result of these three reasons for describing the intentions expressed by children, several taxonomies have been developed. Among these are the coding systems of Bates (1976); Bates et al. (1979); Chapman (1981); Coggins and Carpenter (1981); Dale (1980); Dore (1975); Greenfield & Smith (1976); Halliday (1975); Ninio and Wheeler (1984); Roth and Spekman (1984); Wetherby and Prutting (1984); and Wetherby, Cain, Yonclas, and Walker (1988). Because of the intrinsic complexity of analyzing children's pragmatic development, most of these systems have one or more limitations.

The most prominent of these limitations is a lack of clarity as to how different dimensions of communication are distinguished one from another. While some of the systems focus on functional or pragmatic features only, many others confound the analysis by incorporating functional with semantic (Greenfield & Smith, 1976), functional with structural (Chapman, 1981; Coggins & Carpenter, 1981; Dore, 1974), or pragmatic with semantic levels of analysis (Dale, 1980). Another source of confusion in these classification

schemata stems from whether they are coding the achieved communicative effect (Dale, 1980; Halliday, 1975) or the intended communicative effect (Coggins & Carpenter, 1981; Ninio & Wheeler, 1984). A taxonomy may be used to code either type of effect. Therefore, it is important to make an explicit decision as to whether the taxonomy should be based on the inferred intent of the child or on the effect of the child's communicative attempt on the listener (Wetherby & Prizant, 1989).

Another significant problem with many of these taxonomies is that too few communicative behaviours are specified for describing children's communicative intentions (Bates et al., 1979; Coggins & Carpenter, 1981; Dore, 1975; Halliday, 1975; Wetherby et al., 1988). Although this may make coding more simple and increase the reliability of judgements, these systems may not provide a valid depiction of children's communicative abilities. Furthermore, accurately analyzing communicative intent requires the inclusion of a number of levels of analysis (Chapman, 1981). These include analysis of the communicative function at the level of the utterance (ie. request, statement, question, etc.), the discourse relation of one utterance to another (ie. repetition, correction, expansion, initiation, etc.), and the social context of the communicative interaction (ie. socioeconomic status of the speakers) (Chapman, 1981). Many of the existing taxonomies focus on only one of these levels

or arbitrarily mix them in their coding scheme.

The Inventory of Communicative Acts - Abridged (INCA-A) (Ninio, Wheeler, Snow, Pan & Rollins, 1991), an abridged version of the system developed by Ninio and Wheeler (1984), has fewer of these limitations than do the other systems. This system codes the speaker's intended communicative function at two levels, the speech act and the interchange. The speech act level of coding refers to the communicative function depicted by the utterance. The interchange level refers to a "higher-level of organization of talk" (Ninio et al., 1990, p. 21). It is defined as "one or more rounds of talk all of which serve a unitary interactive function" (ibid). By specifying the nature of the intention that is to be coded and by analyzing communicative attempts at two separate levels, the INCA-A deals explicitly with the confusion inherent in many of the previously mentioned taxonomies.

The INCA-A also provides a high level of detail. At the level of the interchange there are 24 possible categories, and at the level of the utterance there are 66 different types of speech acts. The abridged system differs from the original version only in terms of the number of major interchange types, 24 versus 66. The INCA-A also includes codes to indicate nonverbal communicative attempts as well as nonliteral utterances (ie. teasing, sarcasm, etc.) and utterances in which the speaker is speaking for an

inanimate object. Although a taxonomy such as the INCA-A may appear overwhelming, it can be adjusted to whatever level of detail is appropriate for the user's purpose by, for instance, eliminating one of the levels of analysis.

The INCA-A is appropriate for use with both young and older children, as well as the caregivers who interact with these children. Furthermore, the INCA-A was validated ecologically. This validity was accomplished by interviewing mothers as they watched videotapes of themselves interacting with their children and asking them to describe the communicative intents they and their children were expressing. Although it is impossible to establish with complete certainty the intended function of a child's early communicative attempts, soliciting the judgments of the individual who most frequently interacts with the child and who was present in the context of the interaction is a very appropriate source of information.

Acquisition of Communicative Intent

It has been suggested that children progress through three stages in the development of communication: starting from birth is the "perlocutionary stage" in which the infant has a systematic but unintentional effect on the listener; at about nine months, the child begins to use gestures and vocalizations with the intent of having an effect on the

listener, marking the beginning of the "illocutionary stage"; finally, at about 13 months, the child enters the "locutionary stage" and begins to construct propositions to communicate intentionally with referential words (Bates et al., 1975).

During the preverbal stage, children appear to progress by means of general shifts in the social interactions that make their pragmatic intentions, and the fact that they are communicating, more clear (Sugarman-Bell, 1978). Prior to four or five months of age, children's behavioural repertoires are dominated by unitary, repetitive actions directed toward a person or an object, with no clear attempt to manipulate the environment. From this age to approximately seven months, children begin to perform differentiated actions directed toward a person or an object. By eight to ten months, children begin to integrate person-object activities. It is during this final stage of preverbal development that children show "an intent to communicate, apart from an intent to simply accomplish something" (Sugarman-Bell, 1978, p. 62).

Bruner (1981) identified "four basic innate communicative intentions that govern a great deal of the child's communication during the early acquisition of language" (p.162). These include: achieving and regulating joint attention with another; behavioral regulation of others for the purpose of obtaining help in carrying out

goal-directed acts; acts used to direct another's attention to oneself for affiliative purposes; and drawing others into playful pretence and simulation. The first three of these are said to emerge during the first year of life. Bruner's theoretical framework was supported by evidence from Wetherby et al. (1988), who found that virtually all of the 15 children they studied exhibited speech acts in the categories of behavioral regulation, affiliative acts, and joint attention at the prelinguistic, one-word, and multiword stages of language development.

Although a number of studies have been conducted to describe the acquisition of communicative intent, their results are difficult to interpret because of the use of different taxonomies and the lack of consistency with regard to the ages at which the children were observed. Many of the studies have focused on children at the one-word stage of language development or beyond (Coggins & Carpenter, 1981; Dale, 1980; Dore, 1974, 1975). The most frequent intentions expressed in the one-word stage were commenting on or labelling objects and requesting actions or objects. With increasing age, children used more words to express communicative intentions and increased the types of intentions they expressed.

The few investigations of the communicative functions of prelinguistic vocalizations and gestures have shown that children at this early stage of linguistic development

demonstrate a variety of communicative acts, and that the number and interpretability of these intentions increases across the prelinguistic, one-word, and multiword stages (Pan and Snow, 1990; Wetherby et al., 1988). These studies corroborated the findings of Bates et al. (1975) that the predominant means of communication changed with increasing age. In the prelinguistic and one-word stages, children utilized isolated gestures and vocalizations accompanied by gestures. By the multiword stage, verbalization was the primary means of communication. (Carpenter et al., 1983; Wetherby et al., 1988; Pan and Snow, 1990).

Carpenter et al. (1983), in their study of six infants from eight to 15 months of age, found the following "predictable sequence of communicative intents" (p. 110): protesting, request for action, request for object, comment on action, comment on object, and answering. For the last category, answering, only one of the infants met the criterion for emergence, suggesting that the median age for this category is actually beyond the 15-month level.

Similar results are noted by Wetherby et al. (1988) in their study of 15 children. At the prelinguistic stage, the most common categories of communicative intent were commenting (including both commenting on action and commenting on object) and requesting action. Two exceptions to the sequence described by Carpenter et al. (1983) were protesting and request for object. Although these

categories were among the earliest in the Carpenter et al. (1983) study, they were not found in the Wetherby et al. (1988) sample until the multiword stage of development at approximately 24 months. The finding that protesting did not emerge until the multiword stage is in keeping with Dore's (1974) observation that there were few instances of protesting in children at the single-word level.

The present thesis will assess whether Inuit children display patterns in the acquisition of communicative intention similar to those documented in the literature for white, middle-class children.

Chapter 3

CAREGIVER-CHILD INTERACTION

The influence of pragmatics in the field of child language development has not been limited to the study of the pragmatic abilities demonstrated by children. There is also an interest in the role of caregivers as active facilitators of children's language acquisition. It is postulated that the context of social interaction provides the foundation for the acquisition of language (Bruner, 1983; Prutting, 1982). According to this view, acquiring language is best understood as a social activity.

The pragmatic interactionist perspective suggests that successful communication involves reciprocity and mutual negotiation between communicative partners (Wetherby, 1991). Children are viewed as active participants in conversational interactions with their caregivers. Such interactive communication is said to form the social context in which children acquire more advanced and conventional means of communication (Bruner, 1985; Wetherby, 1991) and learn to influence the behaviours and ideas of others through signalling (Prizant and Wetherby, 1990). The pragmatic perspective has led to an abundance of research regarding the nature of the caregiving environment and dyadic interaction in child language development.

This chapter is concerned with the theoretical framework underlying social interaction theories of language acquisition, Bruner's "Language Acquisition Support System" (Bruner, 1983) as an example of the social interactionist view of development, and the communicative modifications demonstrated by white middle-class mothers when interacting with their children. Then, cross-cultural evidence taken from child language studies will be described.

An Interactionist Approach to Language Acquisition

Theoretical Framework

One of the proponents of the interactionist view of language acquisition was the Russian psychologist, Vygotsky. Although Vygotsky's work was done in the 1920s and 1930s, the full impact of his writings did not reach North America until the 1980s (Wertsch, 1985).

Vygotsky proposed that the emergence of higher functions in children is the result of social mediation and interaction. He suggested that consciousness and control of a function appear only "after it has been used and practiced unconsciously and spontaneously. In order to subject a function to intellectual control, we must first possess it" (Vygotsky, 1934, p. 90). He postulated that conscious control of knowledge and behaviour is achieved by means of guided and collaborative interaction with competent members

in the child's environment. Vygotsky asserted that, in the "zone of proximal development", a child is able to demonstrate behaviour with the assistance of others who are more competent that would otherwise be beyond the capabilities of the child alone. Specifically, the zone of proximal development is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Based on this notion, Vygotsky stated "that the only 'good learning' is that which is in advance of development" (Vygotsky, 1978, p. 89). In his theory, the role of the adult or competent peer is that of a tutor who scaffolds the learning task. This process makes it possible for the child to internalize the "interpsychological" knowledge between the adult and child and convert it to "intrapsychological" knowledge.

Language Acquisition Support System

In line with Vygotsky's ideas about the "zone of proximal development" (Vygotsky, 1978), Bruner (1981, 1985) proposed a pragmatically oriented theory in which the pragmatic aspects of language provide a support system for development in the domains of syntax and semantics. In his theory, Bruner hypothesized that the acquisition of the

structure of language depends upon a Language Acquisition Device (LAD) similar to that proposed by Chomsky (1957). The LAD is a recognition device that "makes it possible for the child to master the constitutive rules of his native language without a sufficient sample of instances to support his inductive leaps" (Bruner, 1985, p. 28). However, unlike Chomsky, who believed that the necessary input for the LAD was the surface structure of any natural language, Bruner proposed that the LAD requires an augmented input. This input is received from a Language Acquisition Support System (LASS). "The function of the LASS is to assure that the input will be a form acceptable to the recognition routines of LAD" (Bruner, 1985, p. 28).

Bruner (1985) noted that there is a gradual expansion of skill in intentional communication. This expansion begins prior to the emergence of syntax or semantics and is accomplished by the use of gesture, vocalization, intonation and so on (Bates, 1976; Bruner, 1981, 1983; Dore, 1975; Halliday, 1975). Furthermore, communicative intentions seem to be present very early. In fact, Bruner (1981) proposed a number of "innate" communicative intentions that govern a majority of children's early communicative attempts. According to Bruner (1981, 1985), it is in the interest of fulfilling these communicative intentions that the child develops new structural means for attaining them.

Bruner postulated that the mechanism for the

development of new structural forms is the nature of dyadic communicative interaction between children and their mothers. A great deal of this interaction takes place in highly formatted situations. In these familiar and routinized settings, adults are most likely to be able to recognize and respond to the children's intentions. Children are encouraged to do whatever they can spontaneously and what they cannot do is filled in by the adult. Further, adults provide feedback that helps children to make their intentions clear. This feedback is "fine-tuned" (Bruner, 1981, p. 167) to the children's level of syntax, semantics, lexicon, and so on.

Once children reach a certain level of responding, adults will not accept regressions from that level. In keeping with Vygotsky's (1975) notion of the "zone of proximal development", the nature of this interaction provides a scaffold that aids children in converting "communicative intention to communicative conventions" (Bruner, 1981, p. 175).

In sum, the highly restricted nature of the communicative environment and the scaffolding behaviour of the expert adult allow the language-learning child to acquire some general aspects of communicative use. As this ability develops prior to significant progress in either the syntactic or semantic domains, Bruner believes that pragmatics provide the general support system for the more

formal aspects of language. Although the LASS performs a vital function, Bruner does not regard it as the sole mechanism responsible for the acquisition of language. Instead, he sees it as a necessary condition for the functioning of an innate LAD. The LASS ensures that the child can recognize regularities in adult speech and hence derive the rules of the language.

Modifications in Caregiver Speech

There are a number of psycholinguistic studies of caregiver-child interaction which support the notion that speech to children is "fine-tuned" to the language level of the child. In order to accommodate their children who are learning language, caregivers utilize two strategies to reduce the competence differential that exists between themselves and their children. The first strategy, "self-lowering" (Ochs & Schieffelin, 1984), entails adults simplifying their speech to match more closely what they consider to be the verbal competence of their child. The second strategy is for the caregiver to interpret what the child is expressing as if the child were a competent communicative partner. This is referred to as the "child-raising" strategy (Ochs & Schieffelin, 1984).

The "Self-Lowering" Strategy

There has been much emphasis in the psycholinguistic literature based on white middle-class families on the

features of maternal speech that are modified when addressing young children. The effects of these modifications on grammatical development has been a topic of debate. The opinions vary from the belief that these adjustments have a direct facilitative role in the acquisition of language (van der Geest, 1977), to the belief that such speech behaviour is a reflection of the caregivers' desire to communicate with their children (Brown, 1973; Snow, 1977b). The modifications are phonological and prosodic, syntactic, semantic, and pragmatic in nature (Chapman, 1981).

Phonological and Prosodic Modifications. The phonological changes are found at both the segmental and prosodic levels. The segmental characteristics include phonological simplifications and reduplications (Ferguson, 1964). Mothers' speech to children is also characterized by prosodic variations such as higher fundamental frequency (Garnica, 1977), greater frequency range (Garnica, 1977), slower rate (Broen, 1972), pauses at almost all utterance boundaries and only at these boundaries (Broen, 1972), and high intelligibility (Newport, Gleitman, and Gleitman, 1977).

Syntactic Modifications. Syntactically, mothers' utterances to their young children are shorter, simpler, and more often well formed than speech to an adult or older child. According to Snow (1972), utterances to language-

learning children are shorter both in mean length of utterance (MLU) and in preverb length. Before children are 18 months of age, there is little evidence of change in the mothers' MLU. However, there is a significant correlation between the increase in mothers' and their children's MLUs after the age of 18 months on (Cross, 1977). This effect is present even when age is partialled out (Cross, 1977). It may be related to the children's level of comprehension development (Furrow, Nelson, and Benedict, 1979).

The distribution of sentence types in adult-to-child conversation is different from adult-to-adult conversation. Speech directed to an adult is mainly declarative in form, whereas speech to children contains a high proportion of questions (Broen, 1972; Newport et al., 1977; Cross, 1977). Complex sentences containing conjunctions or multiple propositions are infrequent in mothers' speech to their young children and the majority of utterances addressed to 12-27 month olds are syntactically well formed (Newport et al., 1977).

Semantic Modifications. The words used by mothers to their 2-year-olds are less diverse (Broen, 1972) and more concrete (Phillips, 1973) than those used in conversation with adults. The wh-questions asked of young children are also restricted to forms that appear early in children's comprehension and production (Brown, Cazden, and Bellugi, 1969).

Pragmatic Modifications. Pragmatically, the conversations of mothers with their language-learning children are different than adult-to-adult conversation in several ways. Maternal self-repetition, either partial or exact, is frequent (Benedict, 1975; Newport et al., 1977; Cross, 1977) as is the expansion or recasting of children's utterances (Seitz and Stewart, 1975; Folger and Chapman, 1978). Mothers take their conversational topics mainly from the immediate situation. In fact, the topics are more likely to concern child events than mother events and are least likely to concern activities of third parties (Cross, 1977).

The "Child-Raising" Strategy

With regard to the "child-raising" strategy (Ochs & Schieffelin, 1984), white middle-class mothers frequently assign intentional interpretations to their children's utterances (Bruner, 1981). At first, such mothers attend to what their children are doing and where their children's attention is focused in order to determine what their children are trying to communicate from the context (Bruner, 1981; Foster, 1981; Golinkoff, 1983; Keenan-Ochs, and Schieffelin, 1976). Then, the caregivers gradually reduce their reliance on contextual cues as the child develops more conventional means of expressing their intentions (Bruner, 1981).

Cross-Cultural Evidence of Language Socialization

The universality of the results of psycholinguistic research describing the mother-child communicative context and the development of intentional communication by language-learning children have been challenged by the emergence of language socialization studies. The majority of the psycholinguistic research has been based on one culture - the white middle-class. Ochs and Schieffelin (1984) have referred to this phenomenon as "the invisible culture".

Language socialization studies utilize ethnographic procedures to describe the ways in which children are raised as members of their cultures by the ways they are spoken to. According to Schieffelin and Ochs (1986), language socialization research aims to link "the microanalytic analyses of children's discourse to more general ethnographic accounts of cultural beliefs and practices of the families, social groups, or communities into which the children are socialized" (p. 168). Examination of the findings of language socialization studies suggests that the type of dyadic interaction and the organization of the communication of intentionality displayed in the white middle-class families may not be characteristic of all other cultures and classes.

Studies of other cultural groups have shown that a

variety of patterns of mother-child interaction can and do exist. One pervasive difference discussed in the language socialization literature is that, unlike mother-child interactions in the white middle-class, two-party exchanges in which children are communicative partners are not the norm in some cultures. For example, Schieffelin (1990) observed that Kaluli (Papua New Guinea) mothers never treat their infants as communicative partners in dyadic exchanges since they believe that infants "have no understanding". However, they often involve their children in triadic communication where the mother takes the speaking role for the child. During these exchanges the caregiver utilizes a high-pitched, nasalized voice to mark an utterance as coming from the infant. However, she uses language that is well formed and appropriate for an older child. Furthermore, in these interactions the mothers' utterances are not based upon anything that the infant initiated, either vocally or gesturally. This is also contrary to the findings regarding discourse topics presented in the white middle-class literature.

In cultures such as Samoan (Western Samoa), dyadic interaction is also rare (Ochs, 1988). White North American middle-class children are often alone with a caregiver. Such is not the case for Samoan children. Furthermore, since traditional Samoan houses have no internal or external walls, multiparty conversations with persons inside and

outside of the house are the conversational standard to which the Samoan infant is exposed.

There are also variations with regard to the simplified register of "baby talk" directed to children in different cultures and social classes (Crago, Allen, Hough-Eyamie, in press; Heath, 1983; Schieffelin, 1990). For example, in American Black working-class communities neither "simplifying aspects" such as phonological or lexical simplifications, nor "clarifying features" such as rate and prosody modifications, are present in the speech of adults that is addressed to children (Heath, 1983).

Cross cultural differences also exist in the distribution of sentence types in adult-to-child speech, especially the frequency and types of questions asked of children. For instance, in white middle-class homes children are trained to become "question answerers" by frequent requests for information such as the label or an attribute of an object (Heath, 1982). However, Samoan caregivers rarely ask questions of their children to which they, the caregiver, already know the answer (Ochs, 1988). Similarly, in Black working-class communities, children are rarely asked questions by adults as they are not seen as "information-givers or question-answerers" (Heath, 1983, p. 103). The questions that are asked of Black children are also different in nature - they are asked "analogy questions" or "requests for nonspecific comparisons of one

time, event, or person with another" (p. 109). Older Inuit mothers not only refrain from asking their children close-ended questions but they also discourage their children from asking questions of adults (Crago, 1990).

Notably absent in the caregiver speech demonstrated by other cultural groups is the expansion or reformulation of children's utterances (Crago, 1990; Heath, 1983; Ochs, 1982; Schieffelin, 1990; Scollon, 1982). The fact that Kaluli caregivers do not elaborate on or expand utterances that are initiated by their children may be attributed to certain aspects of their cultural ideology (Schieffelin, 1990). The Kaluli say that "one cannot know what another thinks or feels" (Schieffelin, 1990, p. 72) and they also say that the responsibility for clear expression is with the speaker, whether adult or child. Crago (1990) also noted that in Inuit homes there is no interpretation of young children's vocalizations as intentional messages nor is there any clarification of unintelligible vocalizations.

In addition, Schieffelin and Ochs (1986) have described a continuum of communicative accommodation along which cultures vary with regard to their caregiver-child discourse. One extreme is child-centered accommodation in which "the caregiver takes the perspective of the child in talking to and understanding the child" (Schieffelin and Ochs, 1986, p. 174). Features of the simplified register of caregiver speech demonstrated in the white middle-class are

exemplars of this orientation toward children. Diverse illustrations of child-centered accommodation are found in other cultures. The Inuit of Quebec, for instance, use a register of speech called "affectionate talk" (Crago, 1988). This register includes such maternal behaviours as the chanting of rhythmical verses to babies and the addition of senseless syllables to root words. In addition to affectionate language, Inuit mothers utilize two other alterations - "understandable talk" (making language easier for their children to understand) and "talk not meant to be understood" (the exclusion of children from conversation by ignoring their questions and comments). These communicative adjustments are attempts of Inuit caregivers to "soften" the world for their children and are based on "their beliefs about childhood, the status of children, and what they think is the appropriate way to bring up a child as an Inuk" (Crago, 1988, p. 174).

At the other extreme of the continuum of communicative accommodation is situation-centered communication in which "the child is expected to accommodate to activities and persons in the situation at hand" (Schieffelin and Ochs, 1986, p. 174). One exemplar of this notion is the use of modelling of unsimplified utterances for children to repeat to a third party such as is exhibited by the Kaluli in their "elema" ("say it like that") routine (Ochs and Schieffelin, 1984) or by Inuit in their instructions about greeting

routines (Crago & Eriks-Brophy, in press). This method of language instruction is used to teach children the social uses of assertive language such as teasing, shaming, requesting, challenging, reporting (Schieffelin, 1990) and greeting (Crago, 1988; Demuth, 1986).

Schieffelin and Ochs (1986) suggest that child-centered and situation-centered accommodation are not mutually exclusive and can co-occur within certain societies as well as within communicative practices. The integration of these two forms of accommodation has been described by Watson-Gegeo and Gegeo (1986) in the caregiver-infant interactions of the Kwara'ae (Solomon Islands). Kwara'ae mothers use a simplified speech register and lexicon, expand and paraphrase their children's utterances, respond to child-initiated verbal and non-verbal acts, and frequently engage their children in dyadic conversations. These behaviours correspond to those exhibited by the white middle-class mothers reported in the language acquisition literature and are clearly demonstrative of child-centered accommodation. However, of equal value in the mother-child interactions of the Kwara'ae are another set of behaviours. These include modelling utterances for their children to repeat to a third party, directing children to take notice of others, orienting them to topics of situational concern, and routinely engaging their children in multi-party conversations. This set of communicative strategies

characterizes an orientation to accommodation that is situation-centered.

This review of language socialization studies has emphasized the cross cultural differences that exist in the ways children are spoken to and taught to speak. Rogoff (1990) described the nature of this variation in the following way: "The most important differences across cultures ... involve variation in the skills and values that are promoted according to the cultural goals of maturity" (p. 114). In other words, different cultures encourage different communication skills based on their cultural importance and these skills are taught in different situations, by different means, and by different people as delineated by the cultures' norms of communicative interaction. By this process of caregiver-child interaction the child develops a sense of cultural awareness and cultural membership (Crago, 1992).

It should be noted that these cultural patterns of communicative interaction are not immune to change. For example, Heath (1989) documented the historical and disruptive effect of social policy changes regarding housing on the language socialization of southern working-class Blacks. Similarly, Crago et al. (1993) described the difference in language socialization practices between older Inuit mothers and young mothers. They suggested that this difference is related to issues of cultural evolution,

schooling, and cultural dominance.

The findings of language socialization studies in various cultural settings suggest that the pattern of interaction described in the psycholinguistic literature does not provide an accurate depiction of the language-learning environment of many children in the world. Hence the validity of theories of acquisition based on the white middle-class model of interaction, such as Bruner's (1981, 1983, 1985), are brought into question (Crago et al., in press). However, the language socialization studies described above are based on broad ethnographic descriptions of caregiver-child interaction, not on microanalytic analyses such as those employed in psycholinguistic research. The present study involved a microanalytic analysis of the caregiver-child interaction in the Inuit culture. Comparisons were made within the Inuit culture by analyzing the communicative functions of the utterances expressed by a young Inuit mother, an older and more traditional mother, and a teenage sibling caregiver. Preliminary comparisons with a sample of white middle-class mothers were also made.

Chapter 4

METHOD

The present investigation is a microanalytic examination of a subset of data collected by Crago (1988) in her study of the communicative interaction of four Inuit children and their families. The Crago study utilized naturalistic observation of the Inuit children's early communicative attempts and Inuit caregiver-child interaction. In this thesis, the same data will be re-analyzed with regard to the communicative intention or pragmatic function expressed by these children and their caregivers. In this chapter, the subject selection and data collection procedures used by Crago (1988), the selection of the subset of data used in the present investigation, the coding system employed to investigate communicative intention, and the methods used to analyze these data are described.

The Communities

The subjects in this study were selected from two Inuit communities. Kangirsuk, which is located on a bay of the Payne River, is approximately 1,000 miles north of Montreal and Quaqtaq, which is located on a peninsula that juts out

into the Hudson Strait, is approximately 100 miles north of Kangirsuk. At the time of data collection there were approximately 325 people in Kangirsuk and approximately 200 inhabitants of Quaqtaq. In both of these communities there are only a few white people, who generally serve in roles such as nurses, teachers, and construction workers.

In all formal and informal transactions between Inuit in Kangirsuk and Quaqtaq, the Ungava Bay dialect of Inuktitut is spoken. Although all Inuit residents speak Inuktitut, many of the people under 40 in both communities also speak English, and an increasing number of young people speak French.

The first governmental schools were built in Quaqtaq and Kangirsuk in 1960. Until that time, Inuit families still lived nomadically on the land in igloos and tents. Crago et al. (1993) have reported that once the schools were built, children as young as five years old were removed from their families and lodged in a residence near the school from fall until spring. In order to be closer to their children, families began to settle near the school. Initially, they lived in tents and igloos and then began to build shacks and small houses. In the mid-1960s, the federal government began building houses for the Inuit in which an extended family would live. Recen ly, the number and type of housing units available in northern Quebec have expanded (Crago, 1988). This has resulted in the emergence

of new family living configurations such as nuclear families and single mothers and their children. For a more thorough discussion of sociocultural information regarding the Inuit people and the communities of Kangirsuk and Quaqtaq, see Crago (1988).

Subject Selection

Original Selection Criteria

The four children and their families included by Crago (1988) in her study were chosen according to the following criteria: a unilingual and unicultural home; a child aged 12-24 months with no apparent evidence of mental, physical, or emotional disability. Based on these restrictions, only five children and their families were eligible for inclusion, three males and two females. As research funding was limited to four families, one of the male subjects was randomly selected for exclusion from the study.

Selection of Subsample

For the present study, a subset of two of these children was selected. In order to facilitate comparison of the communicative abilities of the Inuit children with a sample of normative white middle-class children (Ninio & Snow, in preparation; Pan & Snow, 1990), only those families who were videotaped when the target child was 16 and 20

months were included in this investigation, as these ages most closely approximated those studied in the white middle-class sample. This restriction limited the analysis to videotapes of only two of the four children in the Crago (1988) study.

The primary caregivers of these two children provide an interesting contrast. One of the mothers is older and exhibits a more traditional style of caregiving. This family is an example of a traditional extended family in which sibling caregiving is an important factor. The second mother is younger and less traditional. During the data collection for the Crago (1988) study, only the nuclear family consisting of this mother, the father, and the child lived in this home.

The first child is a girl (born June 14, 1985) named Jini. At the time of the Crago study, she lived in Kangirsuk with her 57-year-old adoptive mother, Qaajia, who is actually her grandmother (her father's mother); her 13-year-old sister, Miaji (also adopted); and her adoptive mother's father (the child's great-grandfather). The adoptive mother also has two sons by her common-law partner, but neither of them were residing at home during the taping.

The second child is also a girl (born March 3, 1986), named Suusi. She lived alone with her natural parents, Annie and Tami, in Quaqtaq. At the time of the Crago (1988) study her parents were young (21 and 22 years old). She is

her mother's second child. The first child, a son, was adopted by a couple from the same settlement. Of the four families from the Crago (1988) study, this one was reported to be the most acculturated to southern Canadian ways.

Data Collection

In the Crago (1988) study several different types of data were collected: videotapes of naturalistic caregiver-child interaction, formal and informal interviews, and observation notes. However, in the present study only the videotapes are re-analyzed. In this section, the data collection schedule of the Crago (1988) study, the selection of a subset of that data for inclusion in the present study, and the process of transcription of the videotapes are described.

Data Collection Schedule

Between June 1986 and July 1987, the children and their families were videotaped for five hours on four occasions at approximately three-and-a-half month intervals. This produced a total of 20 hours of videotape for each child and their family. The aim of the videotaping was to obtain a sample of daily life that was as wide and as naturalistic as possible. This goal was obtained by consultation with the families regarding the time of day that taping would take

place.

Transcription of Videotapes

For the Crago (1988) study, half of each five-hour set of tapes was transcribed, producing two-and-a-half hours of transcription at each time interval. As these tapes were to provide a naturalistic sample of daily life, a wide variety of participants and caregivers were present. The transcription was done by several Inuit transcribers who were instructed to "write down everything said to the target child, by the target child, about the target child, and the time at which it was said" (Crago, 1988, p 104). The resulting transcripts did not contain linguistic notation or phonetic transcription of the children's utterances, and unintelligible portions were not included. Nonverbal information regarding the situation, the ongoing activities of the family members, and descriptions of periods of silence was also included. Transcripts were reviewed by a second transcriber for errors and omissions of spelling, translation, and nonverbal information. Reliability was established by consensus.

Selection of Sub-Sample of Data

For the present study, analysis was conducted on the first one hour and forty-five minutes of the transcribed videotapes in which the caregiver was the primary interactor

with the child. This measure of time was chosen for both families at both ages, since only this amount of time was available for one of the families at one of the ages.

It was evident from viewing the tapes that a description of the caregiver-child interaction in the home of child 1, where sibling caregiving was an integral part of daily life, would be incomplete if only mother-child interaction was analyzed. Therefore, an additional 30 minutes of videotape at each age of interaction involving the child and her teenage sister who shared caregiving responsibilities with the mother was also included for analysis.

Supplementing the Transcripts

Owing to the microanalytic nature of the analysis of the children's communicative intentions in the present study, it was necessary to reexamine the videotapes that were to be analyzed and add to the original transcripts an additional level of information including the children's early gestures, vocalizations, and verbalizations. This was done by reviewing the videotapes and transcripts, searching for segments where the experimenter felt that further elaboration was required. An Inuit transcriber then examined those segments, adding the necessary information such as a transcription written in roman orthography of all audible verbalizations/vocalizations made by the child, the

translation and/or explanation of the child's communicative attempts, and any additional gestural information that was not included in the original transcripts.

CHAT Transcription Format

For the purpose of this study, the transcripts of the videotapes were put onto computer files using the Codes for Human Analysis of Transcripts (CHAT) conventions of the Child Language Data Exchange System (CHILDES) (MacWhinney and Snow, 1985, 1990). There are three components of this transcription format: the file headers, the main tier, and dependent tiers. The first of these components, the file headers, provides identification information for the transcript to be analyzed such as the date and time of taping, the location of the segment on the videotape, the birth date and age of the child, information regarding the general setting, the participants involved in the interaction, and so on. The main tier contains the transcription of the speaker's utterance which was most often in Inuktitut. The transcription of the main tier is done in accordance with a set of established CHAT guidelines. The dependent tiers contain a variety of different types of information and are unlimited in number. For the present study dependent tiers were used to denote the English transcription of all utterances spoken in Inuktitut, the time the utterance was spoken, the addressee,

the situational context of the utterance, gestural actions, and the applicable coding for the utterance. Examples of the file headers, main tiers, and dependent tiers are found in the sample transcript in Appendix A.

Data Analysis

Coding the Transcripts

The transcripts then were coded for communicative intent by the experimenter using the abridged version of the Inventory of Communicative Acts (INCA-A), as described by Ninio, Wheeler, Snow, Pan, and Rollins (1991). This version of the system for coding communicative intent is based on a more elaborate system developed by Ninio and Wheeler (1984). It is a two-tiered system in which the first tier, the interchange, is defined as the level of interpersonally agreed-upon communicative activity. The interchange, which may span over several conversational turns, is the function or purpose of the interaction. The second tier, the speech act, is the speaker's communicative intent expressed in the utterance. The INCA-A (Ninio, et al., 1991) consists of 24 interchange categories and 66 speech act categories.

In the present study, one of the interchange categories and one of the speech act categories were not used because of a slight variation from the CHAT conventions for transcribing unintelligible utterances. In CHAT format,

those utterances that are unintelligible due to extraneous factors such as background noise or orientation relative to the microphone are distinguished from those utterances that contain unintelligible speech. The INCA-A also distinguishes this difference at both levels of analysis. At the interchange level of analysis, the two types of unintelligible utterances are coded as OOO and YYY respectively and similarly as OO and YY at the speech act level. In this study, no differentiation was made for the two types of unintelligible utterances and therefore only the YYY and YY INCA-A codes were used.

As the videotapes were made in a naturalistic manner, on various occasions there are, interactors other than the caregiver and the child present. Only utterances that were made by the caregiver to the child and by the child to the caregiver were coded. For the purpose of this study, only those child utterances that were identified as communicative attempts were coded. Verbal and nonverbal, and interpretable and non-interpretable utterances were identified as communicative attempts using the criteria established by Pan and Snow (1990). These included eye gaze/gesture directed at the caregiver, awaiting a response from the caregiver, and the child's persistence in the face of unsuccessful communication. Furthermore, in order to allow comparison with the white middle-class data, in the more traditional family with the older mother and the

sibling caregiver, only those child utterances that were directed to the mother were coded and analyzed.

Miscellaneous codes were placed on a third tier for coding aspects such as communicative intents that included a nonverbal component. This included instances where the communication was expressed entirely nonverbally and for those that were vocal/verbal but were interpretable only because of accompanying nonverbal behaviours. Other third level codes were used to identifiy nonliteral utterances, and Inuit affectionate talk.

The last of these third tier codes, Inuit affectionate talk, is not included in the INCA-A but was a phenomenon observed in the videotapes that the experimenter felt was necessary to include in order to present an accurate depiction of Inuit caregiver-child interaction. Affectionate talk (nilliujuusiq), as coded here, refers to a register of talk to babies used by Inuit mothers that is characterized by the chanting of short phrases or the addition of nonsense syllables onto words and grammatical constructions (Crago, 1988). This type of talk to children is often accompanied by a distinct vocal quality that is harsh and high pitched. A complete list of all of the codes used in the present study appears in Appendix B.

Reliability

A five minute segment of transcribed interaction

between the two Inuit mothers and their children at both data points was coded independently for communicative intent by another coder. This was compared to the original coding by the experimenter in order to establish the rate of observer reliability. Reliability calculated as a simple proportion was 87% at the level of the interchange and 85% at the speech act level.

Computer Analysis of Data

Using the Child Language Analysis (CLAN) computer programs of CHILDES (MacWhinney and Snow, 1985, 1990), the transcripts were analyzed automatically to calculate the following measures:

1. Absolute number of communicative attempts. This was calculated for each caregiver and each child at both ages. This number included all communicative attempts; intelligible verbal utterances, vocalizations, nonverbal communication, and unintelligible attempts.

2. Number of communicative attempts per minute. This was calculated by dividing the absolute number of communicative attempts, as described above, by the number of minutes of minutes of caregiver-child interaction that were coded.

3. Number of different interchange and speech act types. This refers to the absolute number of how many different categories of interchanges and speech acts were

used.

4. Number of different interchange and speech act combinations. This measure is referred to as pragmatic flexibility.

5. Number of tokens of each interchange and speech act. This refers to the number of occurrences of each of the 23 interchange types and the 65 speech act types included in the present study.

6. Number of occurrences of third level codes.

These analyses were made for both of the children and their caregivers at each age.

Comparisons of Interest

Comparisons of the Inuit Caregiver's Communication

A number of comparisons were conducted based on the analysis of the caregivers' communication. The communicative functions expressed by the two Inuit mothers were compared against each other at both time points. This contrast was of interest as it provided a quantitative and microanalytic means of examining the differences between the young Inuk mother and the older more traditional mother that were described by Crago et al. (1993).

The communicative functions expressed by the sibling caregiver were also contrasted against each of the mothers separately. The comparison of the sibling caregiver with her mother was carried out because Crago et al. (1993)

reported that in Inuit families with multiage groupings there is a hierarchy of caregiving in which the various caregivers have different and complementary communicative styles. In one Inuit family such as this, the mother interacted with the child and looked after the child more when they were alone together and retired from the role of primary caregiver when the sibling caregiver was present. Older adults interacted with young children using directives, affectionate talk, teasing, ignoring intrusions and questions, and silence. Sibling caregivers however, made use of teasing and repetition routines. Sibling caregivers did not talk to the children about "important things" (Crago, 1988, p. 230), such as obeying and helping others. These were the domain of the mother. The comparison between the sibling caregiver and the younger mother was made to examine whether the young mother would be more similar to the older mother or to the sibling caregiver who was closer to her age.

Further, the combination of the teenage sibling and her older mother was also compared against the younger, less traditional mother. This analysis was conducted to investigate the notion that in nuclear Inuit families the mother must perform all of the roles in the child's communicative environment that would otherwise have been played by the various caregivers present in traditional multigenerational extended families. This notion is more

clearly expressed in the following segment from an informal interview of an Inuk woman in her 30s that was conducted while watching a videotape of the nuclear family investigated in this study:

> That mother has to be everything all rolled up into one person. She has to be the child's friend, sister, and parent. (Crago, 1988, p. 230).

Comparisons of the Inuit Children's Communication

Comparisons were also conducted based on the results of the analysis of the children's communicative attempts. The results at 16 months were compared to the results found at 20 months in order to investigate the development in intentional communication over time. The results from the two children were also compared to each other in order to examine differences and commonalities between them.

Comparisons of the Inuit and White Middle-Class Children and Caregivers

The results from the Inuit children and their mothers investigated in this study were also compared to the results of a series of normative studies of white middle-class American mother-child interaction conducted as part of an ongoing project at the Harvard Graduate School of Education (Ninio & Snow, in preparation; Pan, 1991; Pan, Rollins, & Snow, 1991; Pan & Snow, 1990). This project is investigating the range and expression of pragmatic communicative acts in a group of approximately 50 English-

speaking normally developing children and their mothers when the children were 14, 20, and 32 months old. The sample of children in this project has an equal distribution of males and females and upper and lower middle-class families. The various studies used for comparative purposes in the present investigation utilized different sized subsets of the entire white middle-class sample. Note that the age of the children in the white middle-class sample at the first data point differs from the age of the Inuit children (14 and 16 months respectively) nevertheless, the 14 month olds were at a similar overall stage of development to the 16 month olds.

The white middle-class sample was obtained in a semi-structured play activity. Each caregiver-child dyad was videotaped in an experimental play room for five minutes of free play followed by approximately ten minutes in which the mother was instructed to interact with her child using the contents of a series of four activity boxes. The activity boxes included a ball, a blanket for peek-a-boo, crayons and paper, and a book. The videotaping session was terminated when they had engaged in all four activities.

Because of the preliminary nature of the Harvard study data, the comparisons between the white middle-class and the Inuit mothers and children were limited to global measures such as the number of communicative acts per minute and the rank order of a subset of the most common interchange types in their sample. In the analysis of the types of

interchanges used by the white middle-class caregivers and their children, the interchange categories MRK (Marking) and PRO (Performing Verbal Moves in an Activity) were collapsed into one category and DRP (Discussing-Related-to Present), DRE (Discussing Recent Event), and DNP (Discussing the Non-Present) were collapsed into another category. Further, the rank order data was limited to the following subset of categories: DHA (Direct Hearer's Attention), DJF (Discussing a Joint Focus of Attention), DRP/DRE/DNP (Discussing Related-to-Present/Discussing Recent Event/Discussing the Non-Present), MRK/PRO (Marking/Performing Verbal Moves in an Activity), NIA (Negotiate the Immediate Activity), and YYY (Uninterpretable Utterances) (Pan & Snow, 1990). For the purpose of comparison to the white middle-class sample, the results for the two Inuit mothers, Qaajia and Annie, were averaged together.

Analysis of the Data

The data included both the absolute and relative frequencies of the interchange, speech act, and third level codes utilized by the children and the caregivers at both data points. The inclusion of relative frequencies was necessary because of the different amounts of videotaped interaction available for the various caregivers (105 minutes for the Inuit mothers and 30 minutes for the sibling

for each of the two data points). In addition, the number of communicative attempts per minute was calculated for each interactor at each time period.

Owing to the small sample size and the large number of codes utilized by the INCA-A system, detailed statistical analysis based on assumptions such as normality and homogeneity of variance were not possible. Therefore, the following results are primarily reported in a descriptive fashion. This method of analysis allowed for a more detailed consideration of the patterns of communicative interaction displayed than would be provided by an overall measure of comparison such as Analysis of Variance. The comparability of the communicative functions of the Inuit children and of the Inuit caregivers with regard to the interchange and speech act categories was assessed by the use of Spearman Rank Order Correlations.

Chapter 5

RESULTS

This chapter presents the results of the microanalytic analysis of caregiver-child interaction in two Inuit homes. For each analysis, the results of the comparisons of the Inuit caregivers; the older mother, Qaajia, the younger mother, Annie, and the sibling caregiver, Miaji, are presented first. This is followed by the data regarding the Inuit children, Jini and Suusi. Whenever possible the results from the Inuit data analysis are compared to data from studies on white middle-class caregiver-child interaction.

The results of the analysis of the amount of caregiver-child interaction in Inuit homes are presented first. This is followed by analysis of the communicative functions expressed in Inuit caregiver-child interaction including an analysis of the number of different types of communicative functions expressed by the Inuit caregivers and children as well as an examination of the tokens of the specific interchanges and speech acts that were used. Results concerning those features of the Inuit caregiver-child communicative interaction that were marked with the various third level codes are also presented.

Amount of Communicative Interaction

In this first section the absolute number of communicative attempts and the number of communicative attempts per minute are presented for the Inuit caregivers and children.

Number of Communicative Attempts by Inuit Caregivers

The results of the analysis of the number of communicative attempts by the Inuit caregivers demonstrates that, at both the 16 and 20 month data points, the older, more traditional mother, Qaajia, produced fewer communicative attempts per minute than either her teenage daughter, Miaji, or the younger, less traditional mother, Annie (See Table 1). At 16 months, the young mother was more talkative than the sibling caregiver and this pattern was reversed at 20 months. Both Inuit mothers, Qaajia and Annie, produced fewer communicative attempts when their children were 20 months old than they did when the children were 16 months old.

Number of Communicative Attempts by Inuit Children

The results of the analysis of the number of communicative attempts produced by the Inuit children revealed that at 16 months of age, Jini (daughter of Qaajia) and Suusi (daughter of Annie) were almost identical in terms of the number of communicative attempts that they produced during the 105 minute sample of caregiver-child interaction.

Table 1

Number of Communicative Attempts by Inuit Caregivers

Age[a]	Caregiver	Absolute Number of Communicative Attempts	Communicative Attempts per Minute[b]
16			
	Qaajia	253	2.4
	Annie	554	5.3
	Miaji	91	3.0
20			
	Qaajia	218	2.1
	Annie	382	3.6
	Miaji	164	5.5

[a]Age refers to age of children in months. [b]For Qaajia and Annie t=105 minutes, and for Miaji t=30 minutes.

Table 2

Number of Communicative Attempts by Inuit Children

Age	Caregiver	Absolute Number of Communicative Attempts	Communicative Attempts per Minute[a]
16			
	Jini	201	1.9
	Suusi	204	1.9
20			
	Jini	120	1.1
	Suusi	203	1.9

[a]For both Jini and Suusi t=105 minutes.

At the 20 month data point, Suusi produced virtually the same number of communicative attempts as she did at 16 months. However, the number of attempts produced by Jini dropped from 16 to 20 months.

Comparison of the Number of Communicative Attempts by Inuit and White Middle-Class Caregivers and Children

Since the white middle-class data were collected from a ten-minute sample of caregiver-child interaction, the comparison between the groups was conducted on the number of communicative attempts per minute instead of the absolute number of communicative attempts. The comparison revealed that the white middle-class mothers were almost six times as talkative as the Inuit mothers at the first data point and eight times at the second data point (See Table 3).

Also worthy of note is the range of results in the white middle-class data. At 14 months the range was 6.7-36.4 and at 20 months it was 15.6-39.4 (Ninio & Snow, in preparation). At both data points, the number of communicative attempts produced per minute by the Inuit mothers was below the lower boundary of the range reported by Ninio and Snow for the white middle-class mothers. Furthermore, unlike the white middle-class mothers who demonstrated no developmental change in the number of communicative attempts produced per minute from the first to the second data point (Ninio & Snow, in preparation; Pan & Snow, 1990), both of the Inuit mothers both demonstrated a

notable decrease on this measure.

As with the comparison of the Inuit and the white middle-class mothers, the white middle-class children were more talkative at both data points than the Inuit children. At 14 months the white middle-class children were producing 3.7 (range .31-12.2) communicative attempts per minute and this increased to 7.6 (range 2.9-13.9) by 20 months (Ninio & Snow, in preparation). At 16 months the Inuit children were in the lower half of the range for the white middle-class children and at 20 months both Suusi and Jini were below the

Table 3

Number of Communicative Attempts per Minute by Inuit and White Middle-Class Caregivers and Children

	Inuit	Age[a]	WMC	Age
Caregivers				
	3.8	16	21.6	14
	2.9	20	23.3	20
Children				
	1.9	16	3.7	14
	1.5	20	7.6	20

Note. WMC = white middle-class. The data for WMC mothers are from "Pragmatic Development" by A. Ninio and C. E. Snow. To Appear in T. Bhatia and W. Ritchie (Eds.), Handbook of Language Acquisition, San Diego: Academic Press.

[a]Age refers to age of children in months.

lowest value observed by Ninio and Snow. Furthermore, the Inuit children did not demonstrate the developmental pattern of increase in the number of communicative attempts that was reported for the white middle-class children (Ninio & Snow, in preparation, Pan & Snow, 1990).

Types of Communicative Functions

With regard to the types of communicative functions expressed by the Inuit caregivers and children, there are three measures of interest: the number of interchange types, the number of speech act types, and the pragmatic flexibility of their use. As mentioned previously, pragmatic flexibility refers to the number of different interchange/speech act combinations produced.

Types of Communicative Functions Used by Inuit Caregivers

The analysis of the number of different types of communicative functions expressed by the Inuit caregivers at the 16 and 20 month data point did not reveal a consistent pattern of increase or decrease (See Table 4). The older, more traditional mother, Qaajia, demonstrated an increase in the number of interchanges and speech acts that she used as well as in her pragmatic flexibility. However, the younger mother, Annie, used the same number of interchanges types with her daughter at the 20 month data point as she did at the 16 month data point. Furthermore, Annie decreased in

the number of different speech acts she used and in pragmatic flexibility. The opposite pattern was observed for the sibling caregiver, Miaji, who decreased in the number of interchange types but increased in terms of speech acts and pragmatic flexibility.

Table 4

Types of Communicative Functions Used by Inuit Caregivers

Age[a]	Caregiver	Number of Interchange Types	Number of Speech Act Types	Pragmatic Flexibility
16				
	Qaajia	12	24	63
	Annie	17	42	79
	Miaji	13	20	38
20				
	Qaajia	15	31	73
	Annie	17	34	77
	Miaji	10	27	45

[a]Age refers to age of children in months.

Types of Communicative Functions Used by Inuit Children

The analysis of the number of types of interchanges and speech acts produced by the Inuit children revealed only minimal developmental changes (See Table 5). However, both Jini and Suusi demonstrated a notable expansion in pragmatic flexibility from 16 to 20 months.

Table 5

Types of Communicative Functions Used by Inuit Children

Age	Child	Number of Interchange Types	Number of Speech Act Types	Pragmatic Flexibility
16				
	Jini	15	17	33
	Suusi	11	19	29
20				
	Jini	15	21	44
	Suusi	12	20	37

Comparison of Types of Communicative Functions Used by Inuit and White Middle-Class Caregivers and Children

Because of the difference between the Inuit and the white middle-class samples of caregiver-child interaction, it was not appropriate to compare the two groups in terms of the absolute number of types of communicative functions. However, it was possible to compare the two samples in terms of developmental trends. The results of the analysis of the types of communicative functions expressed by the Inuit caregivers parallel the findings for the white middle-class mothers (Ninio & Snow, in preparation; Pan & Snow, 1990). In both samples, no consistent pattern of increase or decrease in the number of types of communicative functions was observed for the caregivers.

With regard to the number of types of communicative functions expressed by the children, both the Inuit and the

white middle-class samples demonstrated an increase in the number of types of interchanges and speech acts as well as in pragmatic flexibility (Ninio & Snow, in preparation, Pan & Snow, 1990). However, the data presented for the white middle-class children (Pan & Snow, 1990) in comparison to that for the Inuit children, revealed larger increases from the first to second data point in terms of the number of types of interchanges and speech acts used and in pragmatic flexibility (See Table 6).

Table 6

Developmental Increase in Types of Communicative Functions

	Inuit	WMC
Interchanges	0.5 (range 0-1)	3.2 (range 2-4)
Speech Acts	2.5 (range 1-4)	7.2 (range 1-12)
Pragmatic Flexibility	9.5 (range 8-11)	11.8 (range 3-16)

Note. WMC = white middle-class. The data for the white middle-class children are from "Shared Definitions of Communicative Activity in Early Mother-Infant Interaction" by B. Pan & C. E. Snow, 1990, paper presented at the International Conference on Infant Studies, Montreal.

Tokens of Communicative Functions

Also of interest in the current investigation are the tokens of the various types of interchanges, speech acts, and the communicative features that were coded with the third level codes. An analysis of the tokens provides a means of investigating those communicative activities that the Inuit caregivers and children used frequently and those that were less common. This section includes a correlational analysis of the tokens of the interchanges and speech acts used by the Inuit caregivers and children, a descriptive analysis of the individual preferences for the various interchanges, speech acts, and third level communicative features, and a preliminary comparison of the Inuit data with the findings for the white middle-class sample. The absolute frequency data for all levels of coding for the Inuit caregivers and children are provided in Appendix C.

Correlational Analysis of Tokens of Communicative Functions

Inuit Caregivers' Interchanges and Speech Acts

The rank order data used to calculate the Spearman rank order correlation coefficients for the caregivers' interchanges and speech acts are provided in Appendix D. The correlational analysis of the Inuit caregivers' use of the interchanges and speech acts revealed significant

relationships for all contrasts (See Table 7). The Spearman rank order correlation coefficients were consistently higher at the speech act than at the interchange level of analysis. The correlations between the two mothers, Qaajia and Annie, tended to be larger than the other contrasts. However, this was inconsistent. Similarly, the comparison between Miaji and her mother, Qaajia, tended to be larger than the comparisons between Miaji and Annie. However, this was also inconsistent. The one invariable trend in the correlational analysis was a decrease in correlation for all comparisons between 16 and 20 months.

Table 7

Spearman Rank Order Correlation Coefficients for Inuit Caregivers' Interchanges and Speech Acts

Caregivers	Age[a]	Interchange	Speech Act
Qaajia & Annie			
	16	.574**	.822**
	20	.540**	.635**
Qaajia & Miaji			
	16	.561**	.726**
	20	.427*	.697**
Annie & Miaji			
	16	.510*	.714**
	20	.485*	.690**

[a]Age refers to age of children in months.

*p<.05. **p<.01.

Inuit Children's Interchanges and Speech Acts

The rank order data used to calculate the Spearman rank order correlation coefficients for the children's interchanges and speech acts are provided in Appendix D. The correlational analysis of the Inuit children's use of the different categories of interchanges and speech acts revealed significant relationships between the children at both the interchange and speech act level of analysis at 16 and 20 months (See Table 8). Note that the correlation is larger for the speech acts at 16 months but larger for the interchanges at 20 months, and that the correlation increases for the interchanges and decreases for the speech acts.

Table 8

Spearman Rank Order Correlation Coefficients for Inuit Children's Interchanges and Speech Acts

Children	Age	Interchange	Speech Act
Jini & Suusi			
	16	.683*	.860*
	20	.802*	.766*

*p<.01.

Analysis of Interchange Categories

Inuit Caregivers' Interchanges

The distributions of the caregivers' interchanges, as

shown in Tables 9 and 10, indicated why there were significant correlations between the three Inuit caregivers' distributions of interchanges at both data points (Table 7). At 16 months, 12 of the 23 interchange category types were not used or used with low frequency (less than 4%) for all three caregivers (See Table 9); NIA (Negotiate the Immediate Activity) was the most frequently occurring interchange type, accounting for approximately half of each caregiver's utterances; and another commonly occurring interchange for the Inuit caregivers was DJF (Discussing a Joint Focus of Attention).

Individual differences in the distribution of the interchanges did emerge for some of the categories. For instance, Annie made frequent use of NMA (Negotiate Mutual Attention) while NCS (Negotiate Co-Presence and Separation) and YYY (Uninterpretable Utterance) were common for Qaajia. The interchanges DRE (Discussing Recent Event) and PRO (Performing a Verbal Move in Activity) were used frequently by the sibling caregiver, Miaji, but not by the Inuit mothers. Lastly, DHA (Direct Hearer's Attention) and SAT (Showing Attentiveness) were common interchanges for both Inuit Mothers but not for Miaji.

At the 20 month data point, the same type of pattern emerged. Of the 23 categories, 12 were non-existent or were in low use (less than 4%) by all three Inuit caregivers (See Table 10). Again, NIA (Negotiate the Immediate Activity)

Table 9

Proportional Distribution of Inuit Caregivers' Interchanges at 16 Months

	Caregiver		
Interchange	Qaajia	Annie	Miaji
CMO	-	1.1%	-
DCA	-	-	-
DCC	0.4%	0.9%	-
DFW	-	0.7%	-
DHA	10.7%	5.8%	2.2%
DHS	-	2.3%	2.2%
DJF	12.6%	4.0%	8.8%
DNP	2.8%	-	-
DRE	3.2%	-	9.9%
DRP	2.4%	4.0%	2.2%
DSS	-	0.4%	-
MRK	2.4%	1.3%	4.4%
NCS	7.1%	0.5%	-
NIA	45.1%	57.2%	51.6%
NFA	-	-	-
NFW	-	-	-
NMA	1.6%	10.8%	2.2%
PRO	-	3.8%	7.7%
PSS	-	0.2%	3.3%
SAT	4.7%	4.0%	-
SDS	-	-	-
TXT	-	0.2%	1.1%
YYY	7.1%	2.9%	2.2%

accounted for a large portion of the three caregivers' utterances and DJF (Discuss a Joint Focus of Attention) was common for all of them.

As was the case at the first data point, certain idiosyncrasies also emerged in the patterns of interchange use. Annie, the younger mother, continued to use NMA (Negotiate Mutual Attention) with higher frequency. She also used PRO (Performing a Verbal Move in an Activity) and PSS (Negotiating/Discussing Possession of Objects) more frequently than the other two caregivers. Annie continued to commonly use SAT (Showing Attentiveness). However, Qaajia's use of this interchange decreased at the 20 month data point. Similarly, there was a decrease in the incidence of NCS (Negotiate Co-Presence and Separation) and YYY (Uninterpretable Utterance) in Qaajia's utterances. However, she continued to use DHA (Direct Hearer's Attention) frequently. The interchanges, DRE (Discussing a Recent Event) and DRP (Discussing Related-to-Present) were also more common for Qaajia than for Annie or Miaji. At 20 months, DFW (Discussing Fantasy World) and NFW (Negotiate Fantasy World) accounted for a large portion of Miaji's utterances, while she discontinued use of DRE (Discussing a Recent Event) and PRO (Performing a Verbal Move in an Activity).

Table 10

Proportional Distribution of Inuit Caregivers' Interchanges at 20 Months

	Caregiver		
Interchange	Qaajia	Annie	Miaji
CMO	0.5%	1.6%	-
DCA	-	-	-
DCC	0.5%	2.4%	-
DFW	3.2%	3.4%	30.5%
DHA	11.9%	1.3%	1.8%
DHS	1.4%	3.9%	-
DJF	11.5%	6.0%	15.9%
DNP	1.8%	2.4%	-
DRE	6.4%	-	-
DRP	7.8%	2.6%	1.2%
DSS	-	1.0%	-
MRK	-	0.5%	1.2%
NCS	-	1.8%	2.4%
NIA	46.8%	49.2%	33.5%
NFA	-	-	-
NFW	-	-	9.1%
NMA	2.3%	7.9%	3.7%
PRO	1.8%	6.5%	-
PSS	-	4.2%	0.6%
SAT	1.4%	4.5%	-
SDS	-	-	-
TXT	0.5%	-	-
YYY	2.3%	0.8%	-

Inuit Children's Interchanges

The distributions of the interchange categories in Tables 11 and 12 reveal similar patterns of use by Jini and Suusi that are in accordance with the correlational results in Table 8. At 16 months, 17 of the 23 interchange types were not used or used with low frequency by both of the Inuit children (See Table 11). The interchange categories YYY (Uninterpretable Utterance), NIA (Negotiate Immediate Activity), and DJF (Discussing a Focus of Joint Attention) were used frequently by both Jini and Suusi and accounted for almost three quarters of the children's utterances.

Individual differences in the distribution of some of the interchange categories were also observed for the children. The one major difference was the frequent use of NCS (Negotiate Co-Presence and Separation) by Jini. Less marked differences were the more frequent use of DCC (Discuss Clarification of Verbal Communication) and NMA (Negotiate Mutual Attention) by Suusi.

At 20 months, 16 of the 23 interchange categories were not used or used with low frequency by the Inuit children (See Table 12). NIA (Negotiate the Immediate Activity) was the most frequently occurring interchange for both Jini and Suusi. Although the incidence of YYY (Uninterpretable Utterances) dropped for both children from 16 to 20 months, it was still a common interchange type. Also, frequently used by both children at 20 months was DFW (Discussing

Table 11

Proportional Distribution of Inuit Children's Interchanges at 16 Months

	Child	
Interchange	Jini	Suusi
CMO	-	-
DCA	-	-
DCC	1.0%	4.4%
DFW	0.5%	1.0%
DHA	1.0%	-
DHS	-	-
DJF	10.4%	7.4%
DNP	0.5%	-
DRE	2.0%	-
DRP	1.5%	1.0%
DSS	1.0%	0.5%
MRK	3.0%	0.5%
NCS	13.4%	2.0%
NIA	30.3%	38.7%
NFA	-	-
NFW	-	-
NMA	0.5%	4.4%
PRO	-	2.5%
PSS	0.5%	-
SAT	0.5%	-
SDS	-	-
TXT	-	-
YYY	33.8%	37.7%

Table 12

Proportional Distribution of Inuit Children's Interchanges at 20 Months

	Child	
Interchange	Jini	Suusi
CMO	-	-
DCA	-	-
DCC	0.8%	3.4%
DFW	12.5%	6.9%
DHA	3.3%	3.4%
DHS	0.8%	-
DJF	15.0%	2.5%
DNP	1.7%	1.0%
DRE	1.7%	-
DRP	5.0%	-
DSS	-	3.4%
MRK	1.7%	1.0%
NCS	3.3%	2.0%
NIA	30.8%	38.9%
NFA	-	-
NFW	-	-
NMA	4.2%	9.4%
PRO	3.3%	8.4%
PSS	0.8%	2.0%
SAT	-	-
SDS	-	-
TXT	-	-
YYY	15.0%	21.2%

Fantasy World).

Individual differences were evident for the interchange categories of DJF (Discuss a Joint Focus of Attention) and DRP (Discuss Related-to-Present) both of which were more common for Jini than for Suusi. Both NMA (Negotiate Mutual Attention) and PRO (Perform a Verbal Move in an Activity) were used more often by Suusi than Jini.

Comparison of Interchange Categories Used by Inuit and White Middle-Class Caregivers and Children

For the purpose of comparison to the white middle-class data, the overall proportional distribution and the overall rank order distribution of the interchanges were calculated for the two Inuit mothers, Qaajia and Annie, averaged together and also for the two Inuit children, Jini and Suusi. These distributions are presented in Appendix E. Because of the limitations of the white middle-class data, the comparison between the Inuit and the white middle-class caregivers and children had to be limited to a small subset of the interchange categories.

Comparison of the rank order distributions within the subset of interchange categories revealed considerable similarity between the two groups of mothers (See Table 13). The interchange NIA (Negotiate Immediate Activity was the most common interchange for both the Inuit and white middle-class mothers at both data points. Another similarity in interchange distribution was the high rank for DJF (Discuss

Table 13

Rank Order Distribution of Selected Interchanges by Inuit and White Middle-Class Caregivers

Age[a]	Interchange	WMC	Inuit
14/16[b]			
	DHA	4	2
	DJF	2	3
	DRP/DRE/DNP	5	4
	MRK/PRO	3	5
	NIA	1	1
20			
	DHA	3	4
	DJF	2	3
	DRP/DRE/DNP	4	2
	MRK/PRO	5	5
	NIA	1	1

Note. WMC = white middle-class. The data for the WMC mothers are from "Shared Definitions of Communicative Activity in Early Mother-Infant Interaction" by B. Pan and C. E. Snow, 1990, paper presented at the International Conference on Infant Studies, Montreal.

[a]Age refers to age of children in months. [b]At first data point, the white middle-class children were 14 and 16 months old respectively.

a Joint Focus of Attention) for both groups of mothers at both ages. At the first data point, both the Inuit and the white middle-class mothers used DRP/DRE/DNP (Discussing Related-to-Present/Discussing Recent Event/Discussing the Non-Present) relatively infrequently and at 20 months, MRK/PRO (Marking/Performing a Verbal Move in an Activity) ranked last in this subset of interchanges for both groups.

It should be noted however, that the subset of five categories of interchanges discussed by Pan and Snow (1990) do not encompass the five most commonly occurring interchanges produced by the Inuit mothers. At both the first and second data point, NMA (Negotiate Mutual Attention) is among the five interchanges most frequently used by the Inuit mothers (See Appendix E). Further, at the 16 month data point, SAT (Showing Attentiveness) and YYY (Uninterpretable Utterances) accounted for the same proportion of the Inuit mothers' utterances as MRK\PRO (Marking\Performing a Verbal Move in an Activity). However, both NMA (Negotiate Mutual Attention) and YYY (Uninterpretable Utterance) were more commonly used by one but not both of the Inuit mothers. Therefore, the relatively high overall proportion for these interchanges may reflect individual interchange preferences and not group trends.

When comparing the overall distribution of the interchange categories for the Inuit and the white middle-

class children, the two groups appear quite similar at the youngest age (See Table 14). The most common interchange for both groups of children was YYY (Uninterpretable Utterance) and the second most common was NIA (Negotiate the Immediate Activity). Of this subset of interchange categories, DRP/DRE/DNP (Discussing Related-to-Present/Discussing Recent Event/Discussing the Non-Present) was used relatively infrequently by the Inuit and the white middle-class children. The only major discrepancy between the groups was for DHA (Direct Hearer's Attention) which was ranked fairly highly for the white middle-class children but was virtually not used by the Inuit children.

At 20 months the overall distribution of the interchanges for the two groups of children appeared less similar than at the earlier data point. Although the proportion of interchanges that were coded YYY (Uninterpretable Utterances) decreased considerably from 35.5% at 16 months to 18.1% at 20 months for the Inuit children, it remained their second most frequent interchange type in comparison to fifth rank for the white-middle class children. In fact for the white middle-class children, the incidence of uninterpretable utterances dropped from 48.8% at 14 months to 3.2% at 20 months (Pan & Snow, 1990). The one distinct similarity between the two groups of children at 20 months was the first place ranking for NIA (Negotiate Immediate Activity).

Table 14

Rank Order Distribution of Selected Interchanges by Inuit and White Middle-Class Children

Age	Interchange	WMC	Inuit
14/16[a]			
	DHA	3	6
	DJF	4	3
	DRP/DRE/DNP	6	5
	MRK/PRO	5	4
	NIA	2	2
	YYY	1	1
20			
	DHA	3	6
	DJF	2	4
	DRP/DRE/DNP	4	5
	MRK/PRO	6	3
	NIA	1	1
	YYY	5	2

Note. WMC = white middle-class. The data for the WMC children are from "Shared Definitions of Communicative Activity in Early Mother-Infant Interaction" by B. Pan and C. E. Snow, 1990, paper presented at the International Conference on Infant Studies, Montreal.

[a]At first data point, the white middle-class children were 14 and 16 months old respectively.

Like the comparison of the Inuit to the white middle-class mothers, the subset of interchanges discussed by Pan and Snow did not include all of the most frequently occurring interchanges for the Inuit children. Both NCS (Negotiate Co-Presence and Separation) and DCC (Discuss Clarification of Verbal Communication) were among the six most frequently used interchanges for the Inuit children at 16 months. This was also true for DFW (Discuss Fantasy World) and NMA (Negotiate Mutual Attention) at 20 months. However, except for DFW (Discuss Fantasy World), all of these interchanges were more prevalent for either Jini or Suusi and therefore may reflect individual differences in interchange use and not trends for Inuit children in general.

Analysis of Speech Act Categories

Inuit Caregivers' Speech Acts

As indicated by the correlational results (Table 7), the three caregivers were very similar in terms of the speech acts they employed when communicating with their children. At the 16 month data point, 53 of the 65 speech act categories were either not used or used with low frequency (less than 4%) for all three Inuit caregivers (See Table 15). The speech act RP (Request/Propose) was used most frequently by both of the Inuit mothers and by the sibling caregiver. Likewise, EI (Elicit Imitation) was a

common speech act for all three caregivers.

Certain speech act categories were used more frequently by the Inuit mothers, Qaajia and Annie, than by the sibling caregiver, Miaji. They included, PF (Prohibit/Forbid), XA (Exhibit Attentiveness), and ST (Statement). The latter of these speech acts, ST (Statement), was used much more frequently by Qaajia than by Annie. Certain other speech acts such as PR (Perform Verbal Move in a Game), were more prevalent for the younger caregivers, Annie and Miaji, than for Qaajia and the speech act, RT (Repeat/Imitate), was used more often by both Qaajia and Miaji than by the young mother, Annie. There were also individual differences for some of the speech act categories. Included in these differences were a high prevalence of QN (Wh-Question) and YY (Uninterpretable Utterance) for Qaajia, CL (Call) for Annie, and YQ (Yes-No Question) and MK (Marking) for Miaji.

At 20 months, a similar pattern of speech act preference emerged for the Inuit caregivers. Out of the 65 speech act categories, 55 were not used or used with low frequency (less than 4%) by the Inuit caregivers (See Table 16). As was the case for the first data point, RP (Request/Propose) and EI (Elicit Imitation) were

Table 15

Proportional Distribution of Inuit Caregivers' Speech Acts at 16 Months

Speech Act	Caregiver			Speech Act	Caregiver		
	Qaajia	Annie	Miaji		Qaajia	Annie	Miaji
AA	-	-	-	NA	-	-	-
AB	-	0.5%	1.1%	ND	-	-	-
AC	-	0.4%	-	PA	-	-	-
AD	-	0.5%	-	PD	-	-	-
AL	-	-	-	PF	5.5%	7.6%	3.3%
AN	-	-	-	PM	-	-	-
AP	0.4%	0.9%	-	PR	0.8%	3.8%	8.8%
AQ	-	-	-	QA	-	-	-
CL	3.6%	7.0%	2.2%	QN	7.5%	0.9%	3.3%
CM	-	0.5%	-	RA	-	-	-
CN	-	-	-	RD	-	0.2%	3.3%
CR	-	0.2%	-	RP	17.8%	37.2%	33.0%
CS	0.4%	0.2%	2.2%	RQ	-	0.5%	-
CT	2.4%	0.4%	-	RR	0.4%	0.9%	-
CX	-	-	-	RT	14.6%	3.1%	8.8%
DC	-	1.1%	3.3%	SA	-	0.4%	-
DP	-	0.2%	-	SC	-	-	-
DR	-	-	-	SI	1.6%	1.3%	3.3%
DS	2.0%	0.9%	1.1%	SS	-	0.5%	1.1%
DW	-	0.4%	-	ST	16.6%	7.6%	4.4%
EA	-	-	-	TA	-	-	-
EC	-	0.2%	-	TD	-	-	-
ED	1.6%	1.1%	-	TO	2.4%	1.1%	1.1%
EI	7.1%	7.0%	5.5%	TQ	-	0.2%	-
EM	-	0.2%	-	TX	-	0.2%	1.1%
EN	-	0.2%	-	WD	1.6%	0.2%	1.1%
EQ	0.4%	0.4%	-	WS	-	-	-
ET	-	0.2%	-	XA	4.7%	4.0%	-
EX	-	-	-	YA	-	-	-
FP	-	-	-	YD	-	-	-
GI	0.4%	0.7%	-	YQ	0.4%	3.2%	7.7%
GR	0.8%	0.7%	-	YY	5.1%	1.6%	-
MK	2.0%	1.8%	4.4%				

Table 16

Proportional Distribution of Inuit Caregivers' Speech Acts at 20 Months

Speech Act	Caregiver			Speech Act	Caregiver		
	Qaajia	Annie	Miaji		Qaajia	Annie	Miaji
AA	-	-	-	NA	-	-	-
AB	-	-	-	ND	-	-	-
AC	0.9%	2.4%	1.2%	PA	-	0.3%	-
AD	0.9%	0.3%	0.6%	PD	0.5%	0.3%	-
AL	-	-	-	PF	10.6%	9.7%	1.2%
AN	-	-	-	PM	-	-	-
AP	1.8%	0.3%	-	PR	0.9%	0.8%	-
AQ	-	-	-	QA	-	-	-
CL	0.9%	4.2%	3.7%	QN	4.6%	8.1%	7.3%
CM	0.5%	0.8%	-	RA	-	-	-
CN	-	-	-	RD	-	1.8%	-
CR	-	0.3%	0.6%	RP	17.9%	19.1%	20.7%
CS	0.9%	1.3%	-	RQ	-	2.9%	1.8%
CT	1.8%	1.0%	1.8%	RR	-	2.1%	-
CX	-	-	-	RT	3.2%	2.6%	3.0%
DC	1.8%	-	0.6%	SA	0.5%	0.8%	4.3%
DP	-	-	1.2%	SC	-	0.3%	-
DR	-	-	-	SI	0.5%	0.8%	7.3%
DS	0.9%	1.8%	0.6%	SS	-	2.6%	0.6%
DW	0.9%	-	-	ST	29.4%	10.2%	20.7%
EA	-	-	-	TA	-	-	-
EC	-	-	-	TD	-	0.5%	-
ED	1.4%	1.3%	1.2%	TO	1.4%	1.3%	0.6%
EI	5.0%	9.7%	6.1%	TQ	-	-	-
EM	-	-	0.6%	TX	0.5%	-	-
EN	-	-	-	WD	-	-	-
EQ	-	2.1%	-	WS	-	-	-
ET	1.4%	-	0.6%	XA	1.4%	4.5%	-
EX	-	-	-	YA	-	-	-
FP	-	-	-	YD	-	-	-
GI	0.5%	0.3%	0.6%	YQ	1.8%	2.6%	1.8%
GR	1.8%	0.5%	0.6%	YY	2.3%	-	1.2%
MK	1.4%	2.6%	9.1%				

common speech acts for all three caregivers. Other commonly occurring speech acts for all of the Inuit caregivers at 20 months were ST (Statement) and QN (Wh-Question). However, ST (Statement) remained most frequent for Qaajia than for either Miaji or Annie, whereas QN (Wh-Question) was used more frequently by Annie and Miaji.

Of the speech acts that were used more frequently by the Inuit mothers than the sibling caregiver at 16 months, only PF (Prohibit/Forbid) was still more common for the mothers at 20 months. The speech act, XA (Exhibit Attentiveness), continued to be used frequently by Annie. However, it was not used as often by Qaajia. With regard to the individual preferences for the various speech acts, Annie continued to use CL (Call) frequently This was also a common speech act for Miaji at 20 months. At the second data point, the speech act MK (Marking) was still prevalent for Miaji and she also frequently used SI (State Intent) and SA (Statement Answer to a Wh-Question). For Qaajia, the prevalence of YY (Uninterpretable Utterance) decreased at the second data point.

Inuit Children's Speech Acts

As was the case for the Inuit caregivers, there was a similar pattern of speech act use by the two children, in agreement with the correlational results (Table 8). At 16 months, 55 of the 65 speech act categories were not used or used with low frequency (less than 4%) for both children

(see Table 17). The most common speech act for both Jini and Suusi was YY (Uninterpretable Utterance). Other speech acts that were prevalent for both Inuit children at the first data point were RP (Request/Propose), RT (Repeat/Imitate), and ST (Statement). Individual patterns of preference were also exhibited by the children. For Jini, CL (Call), MK (Marking), and TO (Mark Transfer of Object) were common speech acts. AC (Acknowledge), RD (Refuse to Do), and PF (Prohibit/Forbid) were frequently used by Suusi.

At 20 months, 57 of the 65 speech act categories were not used or used with low frequency (less than 4%) for both children (See Table 18). The speech acts YY (Uninterpretable Utterance), RP (Request/Propose), and RT (Repeat/Imitate) continued to be prevalent for both Jini and Suusi at the second data point. Other speech acts that were common for both children at 20 months were CL (Call), RD (Refuse to Do), and PR (Perform Verbal Moves in a Game). With regard to the individual patterns of preference exhibited by the Inuit children, Jini continued to use TO (Mark Transfer of Object) more than Suusi and she also used ST (Statement) more frequently. Although the incidence of AC (Acknowledge) decreased for Suusi at 20 months, she still used it more often than Jini.

Table 17

Proportional Distribution of Inuit Children's Speech Acts at 16 Months

Speech Act	Child		Speech Act	Child	
	Jini	Suusi		Jini	Suusi
AA	-	-	NA	-	-
AB	-	-	ND	-	-
AC	0.5%	7.8%	PA	-	-
AD	-	2.0%	PD	-	-
AL	-	-	PF	1.0%	5.9%
AN	-	-	PM	-	-
AP	-	0.5%	PR	0.5%	2.5%
AQ	-	-	QA	-	-
CL	13.4%	1.5%	QN	1.0%	1.0%
CM	-	-	RA	-	-
CN	-	-	RD	3.5%	6.4%
CR	-	-	RP	10.4%	10.8%
CS	-	-	RQ	-	-
CT	-	-	RR	1.0%	3.9%
CX	-	-	RT	7.0%	6.9%
DC	0.5%	-	SA	-	1.0%
DP	-	-	SC	-	-
DR	-	-	SI	-	1.0%
DS	-	-	SS	-	-
DW	-	0.5%	ST	10.4%	5.4%
EA	-	-	TA	-	-
EC	-	-	TD	-	-
ED	-	-	TO	7.0%	0.5%
EI	-	-	TQ	-	-
EM	2.5%	2.0%	TX	-	-
EN	-	-	WD	-	-
EQ	-	-	WS	-	-
ET	0.5%	-	XA	0.5%	-
EX	-	-	YA	-	-
FP	-	-	YD	-	-
GI	-	-	YQ	-	
GR	-	-	YY	30.3%	39.7%
MK	10.0	1.0%			

Table 18

Proportional Distribution of Inuit Children's Speech Acts at 20 Months

Speech Act	Child		Speech Act	Child	
	Jini	Suusi		Jini	Suusi
AA	1.7%	0.5%	NA	-	-
AB	-	-	ND	0.8%	-
AC	0.8%	3.9%	PA	-	-
AD	0.8%	-	PD	-	-
AL	-	-	PF	1.7%	3.0%
AN	-	-	PM	-	-
AP	0.8%	-	PR	4.2%	5.9%
AQ	-	-	QA	-	-
CL	6.7%	15.8%	QN	-	-
CM	-	-	RA	-	-
CN	-	-	RD	6.7%	8.9%
CR	-	-	RP	9.2%	10.3%
CS	-	-	RQ	-	0.5%
CT	-	-	RR	0.8%	3.3%
CX	-	-	RT	11.7%	18.7%
DC	0.8%	-	SA	-	3.0%
DP	0.8%	-	SC	-	2.0%
DR	-	-	SI	0.8%	-
DS	-	0.5%	SS	-	-
DW	2.5%	0.5%	ST	21.7%	0.5%
EA	-	-	TA	-	-
EC	-	-	TD	-	-
ED	-	-	TO	4.2%	1.5%
EI	-	-	TQ	-	-
EM	-	2.5%	TX	-	-
EN	-	-	WD	-	-
EQ	-	-	WS	-	-
ET	0.8%	-	XA	-	-
EX	-	0.5%	YA	-	-
FP	-	-	YD	-	-
GI	-	-	YQ	-	-
GR	-	-	YY	19.2%	18.2%
MK	3.3%	0.5%			

Comparison of Speech Act Categories Used by Inuit and White Middle-Class Caregivers and Children

There are no data presently available from the Harvard study regarding the pattern of speech act use by white middle-class mothers. However, preliminary data are available for the white middle-class children. Pan (1991), reported that the most frequent interpretable speech acts were ST (Statement), SA (Answers to Wh-Questions), RP (Request/Propose), and RD (Refuse to Do). Pan (1991) did not indicate whether this observation was made at the 14 or 20 month data point.

For comparison with the white middle-class data, the overall proportional distribution and the overall rank order distribution of the speech acts were calculated for the two Inuit children, Jini and Suusi, averaged together. These distributions are presented in Appendix F. The interpretable speech acts commonly used (greater than 4%) by the Inuit children at 16 and 20 months are presented in Table 19.

At 16 months, the Inuit children were similar to the white middle-class children in that RP (Request/Propose), ST (Statement), and RD (Refuse to Do) were used commonly by both groups. Of the remaining speech acts that were commonly used by the Inuit children at the first data point, CL (Call), MK (Marking), and AC (Acknowledge) were used disproportionately more by either Jini or Suusi (See Table

16). Therefore, notable differences in speech act use between the two groups of children were limited to SA (Statement Answer to a Wh-Question) and RT (Repeat/Imitate) which was common for the Inuit children. The category SA (Statement Answer to a Wh-Question) was common for the white middle-class children but not for the Inuit and the opposite was the case for RT (Repeat/Imitate).

At 20 months, the two groups of children both commonly used RP (Request/Propose), ST (Statement), and RD (Refuse to Do) however, for the Inuit children, ST (Statement) was used frequently only by Jini (See Table 17). Unlike the white

Table 19

Commonly Used Interpretable Speech Acts by Inuit Children

Age	Speech Acts	Age	Speech Acts
16		20	
	RP		RT
	ST		CL
	CL[a]		RP
	RT		ST[b]
	MK[b]		RD
	RD		PR
	AC[a]		

Note. Commonly used interpretable speech acts refers to those speech acts other than YY (Uninterpretable Utterance) that accounted for more than 4% of the total utterances produced by the Inuit children.

[a]Prevalent for Suusi. [b]Prevalent for Jini.

middle-class children, Jini and Suusi commonly used the categories RT (Repeat/Imitate), CL (Call), and PR (Perform Verbal Moves in a Game). Like at 16 months, the speech act SA (Statement Answer to a Wh-Question) was not prevalent for the Inuit children.

Analysis of Third Level Codes

Inuit Caregivers' Third Level Codes

A number of differences were observed between the Inuit caregivers regarding the communicative features that were noted with miscellaneous third level codes (See Table 20). The most notable difference was observed for AT (Affectionate Talk). At the 16 month data point, this was a prevalent feature of Qaajia's interaction with her daughter. However, it is virtually non-existent in the repertoires of

Table 20

Proportional Distribution of Third Level Codes for Inuit Caregivers

		Caregiver		
Age	Code	Qaajia	Annie	Miaji
16				
	AT	16.2%	0.4%	-
	IN	5.1%	3.6%	7.7%
	NL	5.9%	1.3%	7.7%
20				
	AT	3.7%	0.8%	-
	IN	2.8%	1.0%	-
	NL	1.8%	1.0%	1.2%

the two younger caregivers, Annie and Miaji. At 20 months, the incidence of this form of interaction decreased markedly for Qaajia.

Another difference between the caregivers on the third level codes was that both Qaajia and Miaji used NL (Nonliteral Communication) frequently at 16 months, while Annie did not. At 20 months, none of the caregivers used NL (Nonliteral Communication) often. Lastly, all of the Inuit caregivers used IN (Nonverbal Communication) when interacting with the children at 16 months. However, it was more common for Qaajia and Miaji than for Annie. Further, at 20 months it was not used frequently by any of the Inuit caregivers. In general, the various communicative behaviours that were marked with the third level codes were infrequent at the 20 month data point.

Inuit Children's Third Level Codes

With regard to the communicative features noted with the third level codes for the children, there were both similarities and differences between Jini and Suusi (See Table 21). At 16 months, both children had a high prevalence of IN (Nonverbal Communication). However, at 20 months, Suusi reduced this behaviour, while Jini demonstrated a slight increase.

Another difference between the two children was observed for NL (Nonliteral Communication). At 16 months, this was used frequently by Jini but not by Suusi. The

children demonstrated a similar pattern for SF (Speech For an Inanimate Object). At 16 months neither of the children used this type of communication. However, it did appear in the repertoires of both children at 20 months although it was more common for Suusi than Jini.

Table 21

Proportional Distribution of Third Level Codes for Inuit Children

		Child	
Age	Code	Jini	Suusi
16			
	IN	11.9%	9.3%
	NL	7.0%	-
	SF	-	-
20			
	IN	13.3%	4.9%
	NL	-	-
	SF	2.5%	5.4%

Comparison of the Third Level Codes Used by Inuit and White Middle-Class Caregivers and Children

There are no data available concerning the distribution of the third level codes for the white middle-class caregivers, and the data for the children are limited to the code for IN (Nonverbal Communication). Between 14 and 20 months, the proportion of communicative attempts that were either entirely nonverbal or were both verbal and nonverbal dropped from 34.8% to 22.2% for the white middle-class

children (Pan & Snow, 1990). At 16 and 20 months, both Jini and Suusi produced fewer communicative attempts that included a nonverbal component than the white middle-class children. However, Jini did not demonstrate the expected decrease in the amount of IN (Nonverbal Communication) from 16 to 20 months.

Chapter 6

DISCUSSION AND CONCLUSIONS

This microanalytic study examined the nature of caregiver-child communicative interaction in two Inuit families. The purpose of the study was three-fold: to investigate the intentions expressed in the early communicative attempts of two Inuit children, to contrast the intentions expressed by the Inuit caregivers of these children, and to compare the nature of Inuit caregiver-child communicative interaction to white middle-class caregiver-child communicative interaction. Three hypotheses were proposed in relation to this. First, the Inuit children's early communicative attempts would be similar to those of the white middle-class children. Second, the communicative functions of the Inuit mothers would differ from those of the white middle-class mothers. Third, there would be differences between the three Inuit caregivers with regard to the communicative functions that they expressed when interacting with their children.

In the first part of this chapter, the results of the study are interpreted. This is followed by an evaluation of the three hypotheses in light of the results of the present study. Theoretical implications of the findings for Bruner's interactional theory of language acquisition are

then discussed. Next, methodological issues concerning the design, coding system, and the means of data analysis are presented. This is followed by a description of the implications of the findings of this study for the assessment and intervention of language disorders in non-mainstream cultures. The chapter concludes with a discussion of the future research possibilities arising from this thesis.

Interpretation of Results

Amount of Communicative Interaction

Unlike the white middle-class children (Ninio & Snow, in preparation; Pan & Snow, 1990), the Inuit children did not produce more communicative attempts at 20 months than they did at 16 months. Furthermore, the Inuit children were much less talkative than the white middle-class children. Likewise, the Inuit caregivers produced fewer communicative attempts per minute than the white middle-class caregivers; and within the group of Inuit caregivers, Qaajia, the older, more traditional mother, produced fewer communicative attempts than either the young mother, Annie, or the sibling caregiver, Miaji.

The observation that Inuit caregivers and children produce fewer communicative attempts per minute during caregiver-child interaction than white middle-class

caregivers and children supports the ethnographic findings of Crago (1988), who noted that Inuit caregivers socialize their children to learn by looking and listening. This finding is also congruent with Crago's (1988) description the lack of interpretation by Inuit caregivers of their children's vocalizations as intentional messages. This lack of interpretation often resulted in such vocalizations going unheeded by the Inuit caregivers. Such characteristics of caregiver-child interaction in the Inuit culture contribute to the limited amount of verbal interaction that takes place between Inuit caregivers and their children.

In this study the older traditional mother, Qaajia, produced fewer communicative attempts than either the sibling caregiver, Miaji, or the young mother, Annie. This finding is congruent with Crago's description of certain culturally-defined characteristics of Inuit caregiver-child interaction (Crago, 1988; Crago et al., 1993). According to Crago and her colleagues, older mothers talked less to children than did siblings and young mothers. Older mothers used forms of communication such as ignoring intrusions and questions as well as companionable and disciplinary silence that siblings and young mothers did not use. These cultural differences between young and old Inuit caregivers' interaction are reflected in this study in the amount of communicative interaction used by the different caregivers.

An additional factor that may have contributed to the

much smaller amount of communicative activity displayed by the Inuit children and caregivers is the setting in which the data were gathered. For the studies of the white middle-class caregiver-child interaction, videotapes were made while the caregivers and children interacted in a small laboratory room filled with a number of objects to play with and converse about. Given the nature of the setting and the caregivers' voluntary participation in a study about child language development, the mothers were likely to interpret the situation as one in which they were expected to communicate with their child. However, in the present study, the sample of caregiver-child interaction was obtained by videotaping the two children and their caregivers at home as they went about their usual daily activities. This difference in the two settings may have contributed to the difference in the overall number of communicative attempts produced by the caregivers and children.

The difference in setting may also have contributed to the observation that the Inuit children did not demonstrate the expected increase in the number of communicative attempts from 16 to 20 months. In the white middle-class study the communicative setting was identical at both data points. However, the naturalistic setting of the Inuit study did not ensure that the activities were comparable at both data points. Therefore, the difference in the types of

activities that the caregivers and children were engaged in may have contributed to the observed results. This supposition is supported by the fact that the lack of developmental increase (Suusi remained the same, Jini decreased) for the Inuit children corresponded with a reduction in the number of communicative attempts produced by the Inuit caregivers from 16 to 20 months.

Types of Communicative Functions

Although the Inuit children did demonstrate a developmental increase in pragmatic flexibility, they did not demonstrate an increase in the number of interchanges and speech acts as expected on the basis of the white middle-class data (Ninio & Snow, in preparation; Pan & Snow, 1990) Furthermore, the proportional increase in pragmatic flexibility was not as great for the Inuit children as it was for the white middle-class children (Ninio & Snow, in preparation; Pan & Snow, 1990).

This discrepancy may have been due to the difference between the study of the white middle-class children and this study of the Inuit children with regard to the age difference between the first and second data points. There were six months between the 14 and 20 month data points for the white middle-class children. However, for the Inuit children, there were only four months between the 16 and 20 month data points. The greater amount of developmental

change in terms of the number of different types of interchanges and speech acts and pragmatic flexibility observed for the white middle-class children may have been a reflection of this longer developmental period.

The Inuit caregivers did not demonstrate any consistent pattern of increase or decrease in the number of types of interchanges or speech acts produced or in their pragmatic flexibility. This made them similar to the white middle-class caregivers (Ninio & Snow, in preparation; Pan & Snow, 1990).

Analysis of Interchange Categories

The Inuit children, Suusi and Jini, demonstrated similar patterns of interchange use as evidenced by both the correlational and descriptive analyses, but there were individual differences in the frequencies of some of the interchange categories.

Prior to discussing the results of the comparison of the interchange categories used by the Inuit children and the white middle-class children, the preliminary nature of this comparison should be noted. First, the categories used for comparison are only a small subset of all the possible interchange categories. Secondly, the comparison is based only on the rank order of the various interchanges, not on the proportional distributions. With these cautions in mind, the two groups appeared to be more similar at the

first than at the second data point in terms of their pattern of interchange use. At the first data point, the most common interchange for both groups of children was YYY (Uninterpretable Utterances). The prevalence of this interchange decreased greatly for both the Inuit and the white middle-class children. At the second data point, however, it remained a prevalent interchange type for the Inuit but not for the white middle-class children.

The continued prevalence of YYY (Uninterpretable Utterance) for the Inuit children may reflect differences between the two studies in the transcription and coding of unintelligible utterances. In the present study, uninterpretable utterances that were unintelligible due to extraneous factors such as background noise were not differentiated from intelligible utterances for which the communicative intent was unclear. This difference in coding may have inflated the frequency of the interchange category YYY (Uninterpretable Utterance). Furthermore, a relatively high incidence of utterances that were unintelligible due to extraneous factors is likely in the present study given the unconstrained nature of the data collection setting.

Of the interpretable interchanges, NIA (Negotiate Immediate Activity) was the most common for both the Inuit and the white middle-class children (Pan & Snow, 1990) at both data points. A major discrepancy existed between the two groups of children at both data points for the DHA

(Direct Hearer's Attention) category. This category was fairly common for the white middle-class children but not for the Inuit children.

Some of the interchange categories that were common for the Inuit and not the white middle-class children were artifacts of the individual preferences exhibited by Jini and Suusi for the various interchange categories. When the two Inuit children were averaged together, those interchanges that were very frequent for one child but not the other produced a high overall average and subsequently a high overall rank which then appeared to be a difference between the two groups of children.

Both the correlational and the descriptive analyses of the patterns of interchange use by the Inuit caregivers revealed a fairly strong relationship between the three Inuit caregivers; with the correlation between the two Inuit mothers being greater than the correlation of either of the mothers compared to the sibling caregiver. Interchanges such as NIA (Negotiate Immediate Activity) and DJF (Discuss Joint Focus of Attention) were common for all three of the Inuit caregivers; and individual preferences for certain other interchanges were exhibited by the Inuit caregivers.

The comparison of the interchanges used by the Inuit caregivers to those used by the white middle-class caregivers revealed considerable similarity between the two groups of caregivers. However, like the comparison between

the two groups of children, the similarity between the Inuit and the white middle-class caregivers is based only on the rank order of a small number of the interchange categories and not on the proportional distribution. As for the Inuit caregivers, the interchange categories NIA (Negotiate Immediate Activity) and DJF (Discuss Joint Focus of Attention) were common for the white middle-class caregivers (Pan & Snow, 1990).

The finding that NIA (Negotiate Immediate Activity) was the most frequently occurring interpretable interchange type for both the caregivers and the children in both the Inuit and the white middle-class samples may be an indication of a communicative function that is inherent in early caregiver-child interaction. For instance, it may be a fundamental aspect of all caregiver-child interaction that speech to children is for purposes such as getting the child to perform a certain task or behaviour, stopping the child from doing a prohibited activity, or preventing them from performing dangerous actions, all of which would be classified as NIA (Negotiating Immediate Activity). Likewise, prior to the emergence of spoken language in children, the extent of caregiver-child communication may be largely limited to the negotiation of activities such as requesting objects and actions. This is supported by the finding that requesting objects and actions are among communicative intentions that are acquired earliest by white

middle-class children in the preverbal and one-word stages of language development (Carpenter et al., 1983; Coggins and Carpenter, 1981; Dale, 1980; Dore, 1974, 1975; Wetherby et al., 1988).

Similarly, the frequent use of DJF (Discuss Joint Focus) by both the Inuit and the white middle-class caregivers may be a fundamental aspect of communication to children. In order to impart knowledge about the objects and events in the child's environment, a caregiver must provide a certain amount of commentary about them. However, the form and quantity of such commentary may vary from culture to culture. It will be possible to evaluate this supposition once the data are available for the speech acts used by the white middle-class caregivers.

The results of the analyses of the interchange distributions for the Inuit children and caregivers also indicated a similarity between the Inuit mothers and their children. Of the interpretable interchanges, NIA (Negotiate Immediate Activity) was the most frequently used interchange for both mothers and their children. Similarly, at 20 months the incidence of DFW (Discuss Fantasy World) increased for both Jini and Suusi and this was also observed for Qaajia and Annie.

This kind of relationship between mother and child was also observed in a number of cases described as idiosyncratic patterns of interchange use. For instance, at

both the 16 and 20 month data points, Annie, in particular, frequently used NMA (Negotiate Mutual Attention) and this pattern of preference was also present in Suusi's utterances. Similarly, the various forms of discussion such as DJF (Discuss a Joint Focus of Attention), DNP (Discuss Non-Present), DRE (Discuss a Recent Event) and DRP (Discuss Related-to-Present) were used frequently by Qaajia and Jini but not as frequently by Annie and Suusi. Furthermore, at 16 months both Qaajia and Jini commonly used NCS (Negotiate Co-Presence and Separation) and at 20 months, its prevalence decreased for both of them. At 20 months, PRO (Performing a Verbal Move in an Activity) was frequent for both Annie and her daughter, Suusi.

Analysis of Speech Act Categories

As indicated by the correlational and descriptive analyses of the speech acts, the Inuit children, Jini and Suusi, demonstrated similar patterns of speech act use. However, both children also demonstrated individual preferences for certain specific speech act types. In the comparison with the white middle-class data (Pan, 1991), both groups of children frequently used RP (Request/Propose), ST (Statement), and RD (Refuse to Do). The two groups of children differed on the categories of SA (Answer to Wh-Question), which was commonly used by the white middle-class children (Pan, 1991) but not the Inuit

children, and RT (Repeat/Imitate), which was common only for the Inuit children.

There was also a significant correlation between the three Inuit caregivers in terms of their patterns of speech act use. At the 16 month data point, the relationship between the two Inuit mothers was stronger than the relationship of either mother with the sibling caregiver. However, this was not the case at 20 months, where the strongest relationship between the individual caregivers was between the older mother, Qaajia, and her teenage daughter, Miaji.

The speech acts RP (Request/Propose) and EI (Elicit Imitation) were frequent for all of the Inuit caregivers at both data points. Other speech acts such as such as QN (Question) and ST (Statement) were used by all three caregivers but only at the 20 month data point. Categories such as PF (Prohibit/Forbid) and XA (Exhibit Attentiveness) were used only by the two Inuit mothers and not by the sibling caregiver and others such as PR (Perform Verbal Move in a Game) were more prevalent for the two younger caregivers. There were no data concerning speech act use available for the white middle-class caregivers.

Note that the speech acts that were common for both the Inuit and the white middle-class children such as RP (Request/Propose) and RD (Refuse to Do) are both forms of NIA (Negotiating Immediate Activity). Similarly, the three

Inuit caregivers used RP (Request/Propose) and EI (Elicit Imitation), as well as PF (Prohibit/Forbid). These are all forms of NIA (Negotiate Immediate Activity). The prevalence of these forms of speech acts supports the notion that NIA (Negotiate Immediate Activity) is a fundamental part of caregiver-child interaction. Furthermore, the frequent use of ST (Statement) by the Inuit caregivers is evidence of the centrality of providing commentary on the objects and ongoing activities in the child's environment in DJF (Discuss a Joint Focus of Attention) interchanges.

The observation that QN (Wh-Question) was a prevalent speech act for the older mother, Qaajia, at the first data point, and for all three of the Inuit caregivers at the 20 month data point does not seem to support the findings of Crago (1988). However, upon closer inspection, the relatively high use of this particular speech act is due to the fact that the category QN (Wh-Question) does not differentiate between test questions to which the mothers know the answer and legitimate requests for information. Examination of the utterances made by the three Inuit caregivers that were coded as QN (Wh-Question) revealed definite differences between them. For instance, Qaajia's instances of QN (Wh-Question) included such questions as "amaamaili?" (where's your milk bottle?) while searching for the missing bottle, "kinaa?" (who's calling?) while going to answer the telephone, or "sunaminginna?" (what shall it be?)

while she looks for something to give the child to play with. In contrast, the questions asked by the young mother, Annie, included utterances such as "unaa kina?" (who is that?) and "kinaup?" (whose is it?) She also used questions like "sugumaviit?" (what do you want?) when the child would not stop crying. The sibling caregiver asked questions during fantasy play with telephones made of bananas such as "ganuikkiit?" (how are you?) and "kinauvit?" (what's your name?) and while playing with dolls "sujuq?" (what is it doing?) and "amaamangali?" (where's her milk bottle?). Note that none of the Inuit caregivers asked questions such as "what is this?" to elicit labelling of objects. From these examples of the different kinds of questions that are used by the Inuit caregivers, it is evident that the distribution of questions is more complex that the single category QN (Wh-Question) would imply.

Similarly, the speech act XA (Exhibit Attentiveness) was used frequently by both of the Inuit mothers at the first data point, and continued to be prevalent for the young mother at the second data point. However, the nature of the utterances that were coded as XA (Exhibit Attentiveness) differed considerably for the two Inuit mothers. For the older mother, Qaajia, this speech act referred to instances of Inuit affectionate talk, which is a register of talk to babies used by Inuit mothers that is characterized by the chanting of short phrases or the

addition of nonsense syllables onto words and grammatical construction (Crago, 1988). However, for the young mother, Annie, the speech act XA (Exhibit Attentiveness) included such things as the singing of phrases from religious hymns or made-up songs. XA (Exhibit Attentiveness) was also used to mark utterances produced by the young mother that had no explicit communicative function such as "you funny" or "ijiapingi" (her lovely eyes) while the child was breast fed.

As with the interchange level of analysis, the frequent use of certain speech act categories by particular caregivers resulted in the frequent use of a corresponding categories by the children. For instance, for all three of the Inuit caregivers, EI (Elicit Imitation) was a common speech act and this coincided with the frequent use of RT (Repeat/Imitate) by the children. The frequent use of EI (Elicit Imitation) by the Inuit caregivers and the RT (Repeat/Imitate) by the Inuit children confirms the findings of Crago (188). Crago (1988) reported that Inuit caregivers often engaged in repetition routines to teach their children "the culturally preferred style of learning by modelling after the performance of competent members of their society" (p. 178).

The relationship between the caregivers and the children was also observed in certain idiosyncratic patterns of speech act use. For instance, Annie often used the

speech act CL (Call) and her daughter, Suusi, subsequently had a high incidence of AC (Acknowledge).

The relationship between the speech acts used by the caregivers and those used by the children may have also contributed to the difference between the Inuit and the white middle-class children on the SA (Answer to a Wh-Question) category. If indeed the Inuit mothers demonstrated differences in questioning behaviour in comparison to the white middle-class mothers, as would be expected on the basis of the findings of Crago (1988), this may have resulted in the observed differences between the Inuit and the white middle-class children on the speech act, SA (Answer to Wh-Question).

Analysis of Third Level Codes

There were several interesting findings about the communicative features that were coded with the miscellaneous third level codes. First, the percentage of the white middle-class children's communicative attempts that were coded IN (Nonverbal Communication) (Pan & Snow, 1990) was higher at both data points than for the Inuit children. Furthermore, unlike the white middle-class children (Pan & Snow, 1990), Jini did not show a decrease in the use of IN (Nonverbal Communication) from 16 to 20 months.

The difference between the Inuit and the white middle-

class children on this measure may have resulted from methodological differences between the studies. In the study of the white middle-class children, the researchers and the subjects in the study were native speakers of the same language. Therefore, when coding the interaction, decisions could be based on both the verbal and nonverbal aspects of the interaction. However, in the present study, since the experimenter was not a native speaker of the language of interaction, it was necessary to rely heavily on written transcriptions and translations when coding the interaction. This introduced a level of possible error, as there were no means for the experimenter to determine if the written translation was a literal translation of the verbalization alone or whether it was an interpretation that was influenced by accompanying nonverbal communication. This methodological difference between the Inuit and the white middle-class studies may have influenced decisions regarding whether or not a vocal/verbal communicative attempt was interpretable only because of accompanying nonverbal behaviours.

The third level code IN (Nonverbal Communication) was also interesting because of its use by the three Inuit caregivers at the 16 month data point and at the 20 month data point by Qaajia. The use of nonverbal means of communication by the Inuit caregivers supports the ethnographic findings of Crago (1988), who discussed "the

importance of dealing with silent forms of communicative interaction" (Crago, 1988, p. 203) in the Inuit culture.

The use of NL (Nonliteral Communication) such as teasing by the Inuit caregivers, especially Qaajia and Miaji, also supports Crago's (1988) observations. According to Crago (1988), teasing was sometimes used by Inuit caregivers as a means of expressing such things as "disapproval of inappropriately bossy and demanding behaviour" (Crago, 1988, p. 199).

Likewise, the frequent use of AT (Affectionate Talk) by the older more traditional mother, Qaajia, but not by the younger mother, Annie, or the sibling caregiver, Miaji, also agrees with the findings of Crago (1988). Crago (1988) reported that Inuit affectionate talk was used frequently by older mothers, not often by the younger mothers, and not at all by the sibling caregivers. Furthermore, Crago (1988) also reported that the affectionate talk of the young mother, Annie, was not the same as the affectionate talk of the older mothers. This concurs with the earlier discussion of the differences between the two Inuit mothers for the speech act category of XA (Exhibit Attentiveness).

Lastly, the emergence of the third level code, SF (Speech for an Inanimate Object), in the Inuit children's communication coincides with the emergence of fantasy play as marked by the use of the interchange DFW (Discuss Fantasy World).

Context of Inuit Caregiver-Child Interaction

A number of the patterns of individual preference for certain speech act and interchange categories seem to reflect the overall nature of the interaction in the different Inuit caregiver-child dyads. For instance, interaction between Qaajia, the more traditional Inuit mother, and her daughter Jini often entailed Qaajia drawing Jini's attention to something going on outside the window or on the television and then making a variety of types of comments on it. This pattern of interaction is reflected in the prevalence of DHA (Direct Hearer's Attention) for Qaajia as well as the frequent use of the various forms of discussion such as DJF (Discuss a Joint Focus of Attention), DRE (Discussing Recent Event), and DRP (Discussing Related to Present) in Qaajia and Jini's communicative interaction. There was very little play between Qaajia and Jini. Occasionally, Qaajia assisted Jini in her play activities by tying her doll on her back with a shawl or by demonstrating the proper way to use an object. This was reflected by the low frequency of occurrence of PRO (Perform a Verbal Move in an Activity) for this caregiver and child.

Another characteristic of Qaajia and Jini's interaction was for Qaajia to remain in one location such as the sofa in the living room or at the kitchen table sewing or drinking tea while Jini wandered around the house from room to room at will. The physical configuration of the interaction

between Qaajia and Jini provided a number of opportunities for the use of NCS (Negotiate Co-Presence and Separation) for both caregiver and child. This also contributed to the frequent use of CL (Call) by Jini at both data points and the relatively high proportion of YYY (Uninterpretable Utterance) for Qaajia as she was often out of range of the camera.

The context and nature of interaction between Annie, the younger, less traditional Inuit mother, and her daughter, Suusi, appeared very different in comparison to Qaajia and Jini. For the most part, Suusi was kept in close proximity to her mother and therefore the incidence of NCS (Negotiate Co-Presence and Separation) was not high for this caregiver-child dyad. They played together with toys such as a Fisher-Price stacking toy on the floor and engaged in gentle horse-play on the sofa. When playing with Suusi, Annie spent a great deal of time attempting to get the child's attention and getting her to perform certain tasks such as using a toy in a specific way. She would call Suusi's name to get her attention and then she would model the behaviour while saying "imaak" (like this). Using this method of achieving mutual attention resulted in a high frequency of NMA (Negotiate Mutual Attention) and CL (Call). Annie's interaction with her daughter was characteristically affectionate with a great deal of giggling, kissing, and snuggling as well as verbal play that produced a larger

proportion of PRO (Produce Verbal Move in an Activity) for both Annie and Suusi than for Qaajia and Jini.

During Miaji's interactions with Jini, they played a variety of games together such as pretending bananas were telephones, playing with a doll, and playing peek-a-boo with the bed covers and a scarf. This type of interaction resulted in the frequent use of interchanges such as PRO (Perform Verbal Move in an Activity), DFW (Discuss Fantasy World), and Negotiate Fantasy World). However, unlike Annie's play with Suusi, Miaji's role in her games with Jini appeared to be that of playmate and not a teacher. The only instructional aspect of Miaji's play with Jini was the modelling of verbal tasks such as greetings and numbers through repetition routines. The modelled utterance was occasionally accompanied by the phrase "lalaurit" (say it like this). The modelling of utterances in this fashion produced a high proportion of EI (Elicit Imitation) however, this was used by all of the Inuit caregivers and not only Miaji. Miaji's role as playmate also did not entail being a disciplinarian for the child. The frequency of PF (Prohibit/Forbid) was much lower for Miaji than it was for either of the two Inuit mothers. Like Annie and Suusi, Miaji was very physical and affectionate with Jini.

The Hypotheses

Concerning the hypotheses about the Inuit and the white

middle-class caregivers and their children, preliminary findings revealed both similarities and differences between the groups. The differences between the Inuit and the white middle-class caregivers and children may reflect cultural variation in the socialization practices and cultural goals of mature language use. Other differences may be artifacts of the methodological dissimilarities between the two studies. Those features of caregiver-child interaction that were similar in both samples may reflect certain fundamental characteristics of caregiver-child interaction.

Concerning the hypothesis about the comparisons among the Inuit caregivers, results again revealed both similarities and differences. The results indicated that certain communicative features were common to all three of the Inuit caregivers but certain others were specific to the two mothers, Qaajia and Annie, or the two younger caregivers, Annie and Miaji. The differences between the older mother, Qaajia and her daughter, Miaji, support the observation that there is a hierarchy of caregiving in traditional multigenerational Inuit homes in which the caregivers have different and complementary communicative styles (Crago, 1988). The overlap of the communicative features expressed by the younger mother, Annie, supports Crago's (1988) finding that in less traditional, unigenerational Inuit homes in which there are no other caregivers present, the interaction of the mother with the

child resemb es a combination of the various caregivers who would interact with the child in a more traditional, multigenerational home.

Theoretical Implications

Bruner postulated that there are "four basic innate communicative intentions" (1981, p. 162) that govern children's early communication. These four intentions can be loosely translated into the following INCA-A interchange codes: achieving and regulating joint attention with another would be DHA (Direct Hearer's Attention); behavioural regulation of others for the purpose of obtaining help in carrying out goal directed acts would be NIA (Negotiate Immediate Activity); acts used to direct another's attention to oneself for affiliative purposes would be NMA (Negotiate Mutual Attention); and drawing others into playful pretence and simulation would be DFW (Discussing Fantasy World).

The results of the present study provide equivocal support for Brunner's (1981) hypothesis that these four intentions are innate. NIA (Negotiate Immediate Activity) was the most common interpretable interchange type for the Inuit children at both data points. However, DHA (Direct Hearer's Attention) was infrequent in the Inuit sample. On average, NMA (Negotiate Mutual Attention) was relatively

common for the Inuit children. However, at both data points it was more common for Suusi than Jini. Furthermore, at 16 months Suusi's use of NMA (Negotiate Mutual Attention) was limited to the speech act AC (Acknowledge), indicating that she was merely acknowledging her mother's attempt to obtain her attention. By 20 months both Suusi and Jini use the NMA (Negotiate Mutual Attention) interchange in order to call attention to themselves for affiliative purposes. Although DFW (Discussing Fantasy World) was not prevalent in the Inuit sample at 16 months, by 20 months it was the third most frequently occurring interchange type.

Note that for these categories that could be construed as Bruner's "innate intentions", data from the white middle-class sample of Pan and Snow (1990) are available for only NIA (Negotiate Immediate Activity) and DHA (Direct Hearer's Attention). Unlike Inuit results, the white middle-class children frequently used both of these interchange categories at both data points.

Such differences between the groups emphasize the importance of a language socialization perspective. According to Crago (1988), Inuit children are expected to be "inconspicuous listeners ... of the competent members of their families and communities" (Crago, 1988, p. 223) and not the communicative partners of adults. As such, it would be culturally inappropriate for Inuit children to make extensive use of communicative behaviours such as achieving

and regulating joint attention with another and acts used to direct another's attention to oneself for affiliative purposes.

The results of the present study also have implications for Bruner's (1981, 1983, 1985) notion that the nature of the caregiver-child communicative environment enables the child to learn some of the general aspects of communicative use. There were some similarities between the Inuit and the white middle-class mothers in that certain interchange categories were prevalent for both groups. At a descriptive level, however, the nature of the interaction between caregiver and child, was very different, both between the two cultures and between the various types of caregivers in the Inuit culture. Furthermore, there was a large difference between the Inuit and the white middle-class cultures in the amount of caregiver-child communicative interaction.

The results of this comparison of the two cultures suggest that language learning can and does take place in a variety of contexts both between cultures and within them. For instance, in certain cultural contexts, caregiver-child interaction may not be highly verbal and may not focus on the child's communicative attempts. However, the differences in caregiver-child communicative interaction do reflect culturally specific goals and values. Bruner's (1981, 1983, 1985) pragmatically based theory of language

acquisition is based on the white middle-class example of caregiver-child interaction without careful consideration for the cultural goals that shape caregiver-child interactions. Therefore, the behaviours that he describes as essential to the acquisition of language are consonant with the goals for the socialization of children in the white middle-class culture and are not necessarily universal in caregiver-child interaction across other cultures.

Methodological Issues

By reanalyzing the ethnographic data of Crago (1988) using methodologies commonly employed in psycholinguistic studies of white middle-class caregiver-child interaction, this study is able to address a number of methodological issues. These include assessing whether qualitative analyses of Inuit caregiver-child interaction corroborate the ethnographic description provided by Crago (1988), evaluating the applicability of psycholinguistic methodologies for cross-cultural research, and taking the opportunity to estimate the influence of context on the communicative functions expressed by caregivers and children. Each of these issues will be discussed in this section.

Quantitative-Qualitative Issues

The findings of the quantitative analysis of Inuit caregiver-child interaction agree, for the most part, with the ethnographic results reported by Crago (1988). The prevalence of the speech act QN (Wh-Question) for the Inuit caregivers was the one exception. However, when the questions produced by the three Inuit caregivers were examined qualitatively, the results did support the findings of the ethnographic study (Crago, 1988). Therefore, it appears that when communicative behaviours are studied in a quantitative manner only, the results can provide a slightly different impression than a qualitative examination.

Cross-Cultural Taxonomic Issues

The above example of the QN (Wh-Question) speech act also underlines the issue of whether the taxonomies and methodologies designed for use in Euro-American research are appropriate for cross-cultural studies. The categories included in a taxonomy such as the INCA-A (Ninio et al., 1991) were derived from caregiver-child interaction in the white middle-class setting. As such, they reflect white middle-class notions of the nature of caregiver-child interaction and subsequently, include communicative behaviours and entail a level of specificity that corresponds to those notions. Differences such as those demonstrated in the questioning behaviours of the three

Inuit caregivers are not delineated by such a system, and yet such differences can be culturally significant.

Other instances in which the INCA-A (Ninio et al., 1991) taxonomy was not appropriate for use in the Inuit culture were the interchange SAT (Showing Attentiveness) and the third level code AT (Affectionate Talk). In this study, the interchange SAT (Showing Attentiveness) was used mainly in those cases where the mother's communicative behaviour did not fall into any other category and as such, was used to code different behaviours for the young and the old Inuit mothers. The third level code, AT (Affectionate Talk) was not among the codes included in the INCA-A (Ninio et al., 1991) but was added for the purpose of this study to capture an important aspect of Inuit caregiver-child interaction.

One other feature of Inuit caregiver-child interaction that the INCA-A (Ninio et al., 1991) was not well suited to capture was the silent communication that took place between the older mother, Qaajia, and her daughter, Jini. Although the third level code IN (Nonverbal Communication) was able to capture some of the communication that took place without words, it was not appropriate for all of this type of communication. For example, it did not capture instances in which Qaajia did not respond to Jini's communicative attempts, or instances where Qaajia's physical manipulation of the environment, such as turning the kitchen chairs on their side to prevent Jini from climbing up onto them, or

the ways in which she moved dangerous objects such as scissors out of the child's reach and line of vision with no commentary. Often, these physical manipulations of the environment were not conducted in response to the child's behaviour and were not necessarily directed toward her and furthermore, they were done in complete silence. As a result, they were not classified as communicative behaviours. However, such silent behaviours are a characteristic feature of Inuit caregiver-child interaction, especially between older, more traditional Inuit mothers and their children (Crago, 1988). As a result of the taxonomic scheme used in the present study, silent communication was not adequately reflected. Given the inability of the INCA-A (Ninio et al., 1991) to capture these various aspects of Inuit caregiver-child communicative interaction, it would appear that this particular taxonomic scheme would need adaptations to be better able to capture certain cross-cultural differences.

Variation in the Context of Interaction

The results of the present study suggest that variations in the types of activities that take place during the caregiver-child interaction influence the communicative functions expressed by the caregivers and children. If this is indeed the case, there is the possibility that the results of the studies of the white middle-class caregiver-

child interaction (Ninio & Snow, in preparation; Pan & Snow, 1990) were influenced by the laboratory setting in which the data were collected. This influence may have effected the amount of caregiver-child interaction and/or the communicative functions that were expressed by the caregivers and children. This, in turn, would influence the nature of comparisons that can be made between Inuit and white middle-class samples.

Clinical Implications

The findings of this study have a number of implications for the assessment of language abilities and for language intervention with preschool Inuit children. Assessment and intervention of language disorders in preschool children focuses in on the features of caregiver-child interaction. However, the results of this study suggest that assessment and intervention for Inuit children should not be based on patterns of interaction documented for white middle-class caregivers and children. Instead, clinicians should base their assessment and intervention efforts for these children on those features of caregiver-child interaction that have been documented for the Inuit culture. For instance, the focus in Inuit caregiver-child interaction is not the elicitation of verbal communication from the young children but is the development of good

listening and comprehension skills. Therefore, a more comprehension based model of assessment and intervention may be more appropriate for use with Inuit children. Likewise, as the Inuit caregivers and children frequently make use of repetition routines in their interaction, this could also be incorporated into assessment and intervention strategies. Lastly, since the older Inuit mother talked less to her child than the younger mother or sibling caregiver did, assessment and intervention efforts for children with older mothers should recognize the cultural importance of this difference.

In general, the most important implication that arises from the findings of this study is that patterns of communicative interaction vary from culture to culture and any assessment or intervention of speech or language must be conducted with the framework of culturally appropriate norms of communicative interaction. This caution is not limited to clinical efforts with Inuit children, but extends to any non-mainstream population.

Future Research

The results of this study reveal that there are certain similarities and differences in the communicative interaction of Inuit and white middle-class caregivers and children. The findings are, nevertheless, preliminary in a

number of ways. The two studies on which this comparison is based vary on a number of methodological features including the setting of data collection, the length of the samples of interaction, the number of subjects, and the age of the children at the first data point. Therefore, future research efforts should attempt to compare caregiver-child interaction between these two cultures using more comparable samples of interaction. Since it seems likely that naturalistic observation in the home setting provides a more accurate representation of day-to-day caregiver-child interaction, it would be beneficial to compare samples of Inuit and white middle-class data that were both obtained naturalistically. Furthermore, a larger number of Inuit caregiver-child dyads should be studied in order to examine further the variation among caregivers. Despite the methodological differences between the two studies, the results of this comparison of Inuit and white middle-class caregiver-child interaction suggest that further study on the topic is worthwhile pursuing.

REFERENCES

Austin, J. (1962). How to do things with words. Cambridge: Harvard University Press.

Bates, E. (1976). Language and context: The acquisition of pragmatics. New York: Academic Press.

Bates, E., Benigni, L., Bretherton, I., Camaioni, L., & Volterra, V. (1979). The emergence of symbols. New York: Academic Press.

Bates, E., Camaioni, L., & Volterra, V. (1975). The acquisition of performatives prior to speech. Merrill-Palmer Quarterly, 21, 205-226.

Bates, E. & MacWhinney, B. (1982). Functionalist approaches to grammar. In E. Wanner & L. Gleitman (Eds.), Language acquisition: The state of the art (pp. 173-218). Cambridge, MA: Cambridge University Press.

Bateson, M. C. (1975). Mother-infant exchanges: The epigenesis of conversational interaction. Annals of the New York Academy of Sciences, 263, 101-113.

Benedict, H. (1975). The role of repetition in early language comprehension. Paper presented at the Society for Research in Child Development Biennial Meeting, Denver, April.

Broen, P. A. (1972). The verbal environment of the language-learning child. American Speech and Hearing Monograph, No. 17. Washington, D.C.: American Speech and Hearing Association.

Brown, R. (1973). A first language: The early stages. Cambridge, MA; Cambridge University Press.

Brown, R., Cazden, C. & Bellugi, U. (1969). The child's grammar from I to II. In J. Hill (Ed.), Minnesota Symposia on Child Psychology (pp. 28-73), Vol. 2. Minneapolis: University of Minnesota Press.

Bruner, J. (1975). The ontogenesis of speech acts. Journal of Child Language, 2, 1-19.

Bruner, J. (1978). On prelinguistic prerequisites of speech. In R. N. Campbell and P. T. Smith (Eds.), Recent advances in the psychology of language (pp. 194-214), Vol 4a. New York: Plenum Press.

Bruner, J. (1981). The social context of language acquisition. Language & Communication, 1, 155-178.

Bruner, J. (1983). Child's Talk. New York: Norton.

Bruner, J. (1985). Vygotsky: A historical and conceptual perspective. In J. V. Wertsch (Ed.), Culture, communication, and cognition: Vygotskian perspectives (pp. 21-34). Cambridge: Cambridge University Press.

Carpenter, R., Mastergeorge, A., & Coggins, T. (1983). The acquisition of communicative intentions in infants eight to fifteen months of age. Language & Speech, 26, 101-116.

Carroll, D. W. (1986). Psychology of Language. Pacific Grove, CA: Brooks/Cole.

Chapman, R. S. (1981). Mother-child interaction in the second year of life: Its role in language development. In R. L. Schiefelbusch & D. Bricker (Eds.), Early language: Acquisition and Intervention (pp. 201-250). Baltimore: University Park Press.

Chomsky, N. (1957). Syntactic structures. The Hague: Mouton.

Coggins, T. & Carpenter, R. (1981). The communicative intention inventory: A system for observing and coding children's early intentional communication. Applied Psycholinguistics, 2, 235-251.

Crago, M. (1992). Ethnography and language socialization: A cross-cultural perspective. Topics in Language Disorders, 12, 28-39.

Crago, M. (1990). Variation and variables in caregiver input and interaction: An Inuit example. Paper presented at the University of British Columbia Psychology Colloquium, Vancouver, November.

Crago, M., (1988). Cultural context in communicative interaction of young Inuit children. Unpublished doctoral dissertation. McGill University, Montreal.

Crago, M., Allen, S., & Hough-Eyamie, W. (in press). Exploring innateness through cultural and linguistic variation: An Inuit example. In M. Gopnik (Ed.), The biological basis of language. Oxford: Oxford University Press.

Crago, M., Annahatak, B., & Ningiuruvik, L. (1993). Changing patterns of language socialization in Inuit homes.

Anthropology and Educational Quarterly, 24(3).

Crago, M., & Cole, E. (1991). Using ethnography to bring children's communicative and cultural worlds into focus. In T. Gallagher (Ed.), Pragmatics of language: Clinical practice issues (pp. 99-132). San Diego: Singular Publishing Group.

Cross, T. G. (1977). Mothers' speech adjustments: The contribution of selected child listener variables. In C. E. Snow and C. Ferguson (Eds.), Talking to children: Language input and acquisition (pp. 199-216). Cambridge, UK: Cambridge University Press.

Dale, P. (1980). Is early pragmatic development measurable? Journal of Child Language, 7, 1-12.

Demuth, K. (1986). Prompting routines in the language socialization of Basotho children. In B. B. Schieffelin & E. Ochs (Eds.), Language socialization across cultures (pp. 51-79). New York: Cambridge University Press.

Doehring, D. G. (1988). Research strategies in human communication disorders. Boston: College Hill Press.

Dore, J. (1973). The development of speech acts. Unpublished doctoral dissertation. City University of New York, New York.

Dore, J. (1974). A pragmatic description of early language development. Journal of Psycholinguistic Research, 4, 343-350.

Dore, J. (1975). Holophrases, speech acts, and language universals. Journal of Child Language, 2, 21-40.

Eriks-Brophy, A., & Crago, M. (in press). Inuit ways of maintaining face: Ideas for clinical practice. American Speech-Language and Hearing Association Monographs.

Ferguson, C. A. (1964). Baby talk in six languages. American Anthropology, 66, 103-114.

Folger, J. & Chapman, R. (1978). A pragmatic analysis of spontaneous imitations. Journal of Child Language, 5, 25-38.

Foster, S. (1981). The emergence of topic type in children under 2,6: A chicken and egg problem. Papers and Reports in Child Language Development, No. 20. Stanford, CA: Stanford University Press.

Furrow, D., Nelson, K., & Benedict, H. (1979). Mothers' speech to children and syntactic development: Some simple relationships. Journal of Child Language, 6, 423-442.

Garnica, O. (1977). Some prosodic and paralinguistic features of speech to young children. In C. A. Snow & C. Ferguson (Eds.), Talking to children: Language input and acquisition (pp.63-89). Cambridge, UK: Cambridge University Press.

Golinkoff, R. (1983). The pre-verbal negotiation of failed messages: Insights into the transition period. In R. Golinkoff (Ed.), The transition from prelinguistic to linguistic communication (pp. 57-78). Hillsdale, NJ: Erlbaum.

Greenfield, P. & Smith, J. (1976). The structure of communication in early language development. New York: Academic Press.

Halliday, M. A. K. (1975). Learning how to mean: Explorations in the development of language. London: Edward Arnold.

Heath, S. B. (1982). Questioning at home and at school: A comparative study. In G. Spindler (Ed.), Doing the ethnography of schooling: Educational anthropology in action (pp. 102-131). Toronto, Holt, Rinehart, and Winston.

Heath, S. B. (1983). Ways with words: Language, life, and work in communities and classrooms. Cambridge, UK: Cambridge University Press.

Heath, S. B. (1986). Sociocultural contexts of language development. In Beyond language: Social and cultural factors in schooling minority children (pp. 143-186). Los Angeles: Evaluation, Dissemination, and Assessment Centre.

Heath, S. B. (1989). The learner as a cultural member. In M. L. Rice & R. L. Schiefelbusch (Eds.), The teachability of language (pp. 333-350). Toronto: Paul H. Brookes.

Heath, S. B. (1990). The children of Tracton's children: Spoken and written language in social change . In J. W. Stigler, R. A. Shweder, & G. Herdt (Eds.), Cultural psychology: Essays on comparative human development (pp. 496-519). Cambridge: Cambridge University Press.

Hymes, D. (1972). On communicative competence. In J. B.

Pride & J. Holmes (Eds.), Sociolinguistics: Selected readings (pp. 269-293).

Keenan-Ochs, E. & Schieffelin, B. B. (1976). Topic as a discourse notion: A study of topic in the conversations of children and adults. In C. Li (Ed.), Subject and topic, (pp. 335-384). New York: Academic Press.

MacWhinney, B. & Snow, C. E. (1985). The child language data exchange system. Journal of Child Language, 12, 271-295.

MacWhinney, B. & Snow, C. E. (1990). The child language data exchange system: An update. Journal of Child Language, 17, 457-472.

Marcus, G. E. & Fischer, M. M. J. (1986). Anthropology as a cultural critique. Chicago: University of Chicago Press.

Newport, E., Gleitman, H. & Gleitman, L. (1977). Mother, I'd rather do it myself: Some effects and non-effects of maternal speech style. In C. E. Snow & C. Ferguson (Eds.), Talking to children: Language input and acquisition (pp. 109-149). Cambridge, UK: Cambridge University Press.

Ninio, A. (1985). The meaning of children's first words: Evidence from the input. Journal of Pragmatics, 9, 527-546.

Ninio. A. (1986). The illocutionary aspect of utterances. Discourse Processes, 9, 127-147.

Ninio, A. & Snow, C. E. (1988). Language acquisition through language use: The functional sources of children's early utterances. In Y. Levy, I. Schlesinger, & M. Braine (Eds.), Categories and processes in language acquisition (pp. 11-30). Hillsdale, NJ: Erlbaum.

Ninio, A. & Snow, C. E. (in preparation). Pragmatic development. To appear in T. Bhatia & W. Ritchie (Eds.), Handbook of language acquisition. New York: Academic Press.

Ninio, A., Snow, C. E. , Pan, B. A., Rollins, P. R. (1990). Classifying communicative acts in children's interactions. Unpublished manuscript, Harvard Graduate School of Education.

Ninio, A. & Wheeler, P. (1984). A manual for classifying verbal communicative acts in mother-infant interaction.

In Working papers in developmental psychology, No. 1. Jerusalem: The Martin and Vivian Levin Centre, Hebrew University. Reprinted in Transcript Analysis, 1986, 3, 1-82.

Ninio, A., Wheeler, P., Snow, C. E., Pan, B. A., Rollins, P. R. (1991). INCA-A: Inventory of Communicative Acts - Abridged. Unpublished manuscript, Harvard Graduate School of Education.

Ochs, E. (1979). Transcription as theory. In E. Ochs & B. B. Schieffelin (Eds.), Developmental pragmatics (pp. 43-72). New York: Academic Press.

Ochs, E. (1982). Talking to children in Western Samoa. Language in Society, 11, 77-104.

Ochs, E. (1986). Introduction to B. B. Schieffelin & E. Ochs (Eds.), Language socialization across cultures (pp. 1-16). Cambridge: Cambridge University Press.

Ochs, E. (1988). Language acquisition and language socialization in a Samoan village. Cambridge: Cambridge University Press.

Ochs, E. & Schieffelin, B. B. (Eds.) (1979). Developmental pragmatics. New York: Academic Press.

Ochs, E. & Schieffelin, B. B. (1984). Language acquisition and socialization: Three developmental stories and their implications. In R. A. Shweder & R. A. LeVine (Eds.), Culture theory: Essays on mind, self, and emotion (pp. 276-322). New York: Cambridge University Press.

Pan, B. A. (1991). The relationship of early pragmatic, lexical, and grammatical skills in normally developing children. Paper presented at the Gatlinburg Conference on Research and Theory in Mental Retardation and Developmental Disabilities, Key Biscayne, FL, May.

Pan, B. A., Rollins, P. R., & Snow, C. E. (1991). Pragmatic development and its relationship to morphosyntactic indices of language. Paper presented at the meeting of the Society for Research in Child Development, Seattle, April.

Pan, B. A. & Snow, C. E. (1990). Shared definitions of communicative activity in early mother-infant interaction. Paper presented at the International Conference on Infant Studies, Montreal, April.

Phillips, J. (1973). Syntax and vocabulary of mothers' speech to young children: age and sex comparisons. Child Development, 44, 182-185.

Prizant, B. & Duchan, J. (1981). The functions of immediate echolalia in autistic children. Journal of Speech and Hearing Disorders, 46, 241-250.

Prizant, B. & Rydell, P. (1984). An analysis of the function of delayed echolalia in autistic children. Journal of Speech and Hearing Research, 27, 183-192.

Prizant, B. & Wetherby, A. (1990). Assessing the communication of infants and toddlers. Zero to Three, 11, 1-12.

Prutting, C. (1982). Pragmatics as social competence. Journal of Speech and Hearing Disorders, 47, 123-134.

Rogoff, B. (1990). Apprenticeship in thinking: Cognitive development in social context. New York: Oxford University Press.

Roth, F. & Spekman, N. (1984). Assessing the pragmatic abilities of children: Part 1. Organizational framework and assessment parameters. Journal of Speech and Hearing Disorders, 49, 2-11.

Rowan, L. E., Leonard, L. B., Chapman, K. & Weiss, A. L. (1983). Performative and presuppositional skills in language-disordered and normal children. Journal of Speech and Hearing Research, 26, 97-106.

Schieffelin, B. B. (1990). Give and take of everyday life: Language socialization of Kaluli children. Cambridge: Cambridge University Press.

Schieffelin, B. B., & Ochs, E. (1986). Language socialization. Annual Review of Anthropology, 15, 163-246.

Scollon, S. (1982). Reality set, socialization, and linguistic convergence. Unpublished doctoral dissertation. University of Hawaii, Honolulu.

Searle, J. (1969). Speech acts: An essay of the philosophy of language. Cambridge: Cambridge University Press.

Searle, J. (1965). What is a speech act? In M. Black (Ed.), Philosophy in America. Cornell: Allen & Unwin.

Seitz, S. & Stewart, C. (1975). Expanding on expansions and

related aspects of mother-child communication. Developmental Psychology, 11, 763-769.

Snow, C. E. (1972). Mother's speech to children learning language. Child Development, 43, 549-565.

Snow, C. E. (1977a). Development of conversation between mothers and babies. Journal of Child Language, 4, 1-22.

Snow, C. E. (1977b). Mother's speech research: From input to interaction. In C. E. Snow & C. Ferguson (Eds.), Talking to children: Language input and acquisition (pp. 31-49). Cambridge, UK: Cambridge University Press.

Snow, C. E. (1983). Saying it again: The role of expanded and deferred imitations in language acquisition. In K. E. Nelson (Ed.), Children's language, Vol. 4 (pp. 29-58). New York: Gardner Press.

Snyder, L. (1978). Communicative and cognitive abilities and disabilities in the sensorimotor period. Merrill-Palmer Quarterly, 24, 161-180.

Sugarman, S. (1973). A description of communicative development in the prelanguage child. Unpublished honors thesis. Hampshire College.

Sugarman-Bell, S. (1978). Some organizational aspects of pre-verbal communication. In I. Marková (Ed.), The social context of language. London: Wiley.

Tager-Flusberg, H. & Keenan, E. O. (1987). The acquisition of negation in autistic and Down syndrome children. Paper presented at the Symposium for Research in Child Language Disorders, Madison, WI.

Tough, J. (1977). The development of meaning. New York: Halsted Press.

van der Geest, T. (1977). Some interactional aspects of language acquisition. In C. E. Snow & C. Ferguson (Eds.), Talking to children: Language input and acquisition (pp. 89-108). Cambridge, UK: Cambridge University Press.

Vygotsky, L. S. (1934). Myshlenie i rech'. [Thinking and speech.] Moscow: Sotsekriz. (English translation: (1962) Thought and language., Cambridge: MIT Press.)

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. (M. Cole, V. John-Steiner, V. Scribner, & E. Souberman, Trans. and Eds.).

Cambridge: Cambridge University Press.

Watson-Gegeo, K. A., & Gegeo, D. W. (1986). Calling-out and repeating routines in Kwara'ae children's language socialization. In B. B. Schieffelin & E. Ochs (Eds.), Language socialization across cultures (pp. 17-50). Cambridge: Cambridge University Press.

Wetherby, A. (1991). Profiling pragmatic abilities in the emerging language of young children. In T. M. Gallagher (Ed.), Pragmatics of language: Clinical practice issues (pp. 249-282). San Diego: Singular.

Wetherby, A., Cain, D., Yonclas, D., & Walker, V. (1988). Analysis of intentional communication of normal children from the prelinguistic to the multiword stage. Journal of Speech and Hearing Research, 31, 240-252.

Wetherby, A. & Prizant, B. (1989). The expression of communicative intent: Assessment guidelines. Seminars in Speech and Language, 10, 77-94.

Wetherby, A. & Prutting, C. (1984). Profiles of communicative and cognitive-social abilities in autistic children. Journal of Speech and Hearing Research, 27, 364-377.

Wertsch, J. V. (1985). Vygotsky and the social formation of mind. Cambridge: Harvard University Press.

APPENDIX A

Sample of Coded Transcript

```
@Begin
@Filename:          FA1IHS04.COD
@Tape Location:     TAPE 01-4; 0:00:00-2:03:15
@Date:              14-OCT-1986
@Time:              10:30 a.m.-12:30 p.m.
@Transcriber:       J. Nowra
@Coder:             W. Hough-Eyamie
@Reliability:       J. Eyamie
@Location:          Kangirsuk, N. Quebec
@Language:          Inuktitut
@Sex of CH1:        female
@Birth of CH1:      14-JUN-1985
@Age of CH1:        1;4.0
@Situation:         naturalistic observation in the home,
                    MOT is on the sofa sewing, CH1 is
                    walking around freely
@Participants:      CH1 Jini, MOT Qaajia, GDF Grandfather,
                    SIS Miaji, MBC Martha_Crago

*MOT:     hai, takukkit, pinnguaruluk uquuqunnguaruluk.
%eng:     take a look, your animal toys.
%tim:     0:00:04
%add:     CH1
%sit:     MOT pulls CH1 by arm; MOT points to toys on shelf
%spa:     $DHA:RP

*MOT:     inna.
%eng:     there.
%tim:     0:00:07
%add:     CH1
%sit:     MOT points again, CH1 heads for my video camera
          case, MOT removes it, TV is on with low volume
%spa:     $DHA:ST

*CH1:     naa.
%eng:     xxx.
%tim:     0:00:37
%add:     MOT
%sit:     CH1 is climbing on a box near the TV, CH1 is very
          close to the screen when she vocalizes, MOT comes
          to CH1 and moves the box
%spa:     $YYY:YY

*MOT:     0.
%act:     MOT moves CH1's leg off of the box and moves it
%tim:     0:00:39
%add:     CH1
%spa:     $NIA:PF:IN
```

*CH1: aah.
%eng: ah.
%tim: 0:00:51
%add: MOT
%sit: CH1 vocalizes at the television
%spa: $YYY:YY

*MOT: lartai.
%eng: you'll have it.
%tim: 0:00:52
%add: CH1
%spa: $DNP:ST

*MOT: lartarului.
%eng: you'll have it.
%tim: 0:00:54
%add: CH1
%spa: $DNP:ST

*CH1: laataga.
%eng: i'll have it.
%tim: 0:00:57
%add: MOT
%sit: CH1 tips carton of toys out on the floor, MOT sews
%spa: $DNP:RT

*CH1: katapuu.
%eng: it fell off.
%tim: 0:01:44
%add: MOT
%sit: CH1 continues to tip carton of toys on the floor, MOT sews, CH1 is looking at MOT while vocalizing
%spa: $DRE:ST

*MOT: katapuu.
%eng: it fell off.
%tim: 0:01:47
%add: CH1
%sit: MOT imitates child's vocalization, CH1 pushes to box across the living room floor
%com: affectionate talk
%spa: $DRE:RT:AT

*CH1: xxx.
%eng: xxx.
%tim: 0:01:54
%add: MOT
%sit: CH1 is bending over to pick up a toy on the floor, CH1 bangs on carton with a rattle, MOT yawns audibly, CH1 looks at her briefly
%spa: $YYY:YY

APPENDIX B

Coding Categories

Interchange Categories:

Code	Category	Function
CMO	Comforting	to comfort and express sympathy for misfortune
DCA	Discuss Clarification of Action	to discuss clarification of hearer's nonverbal communicative acts
DCC	Discuss Clarification of	to discuss clarification of hearer's ambiguous verbal communication or a confirmation of speaker's understanding of it
DFW	Discuss Fantasy World	to hold a conversation within fantasy play
DHA	Direct Hearer's Attention	to achieve joint focus of attention by directing hearer's attention to objects, persons, and events in the environment
DHS	Discuss Hearer's Sentiments	to hold a conversation about hearer's non-observable thoughts and feelings
DJF	Discuss a Joint Focus of Attention	to hold a conversation about something in the environment that both participants are attending to such as objects, persons, ongoing actions of hearer and speaker, or ongoing events
DNP	Discuss the Non-Present	to hold a conversation about topics which are not observable in the environment such as past and future events and actions, distant objects and persons, abstract matters (excluding conversations about inner states)
DRE	Discuss a Recent Event	to hold a conversation about immediately past actions and events
DRP	Discuss the Related-to-	to discuss non-observable

	Present	attributes of objects or persons present in the environment or to discuss past or future events related to those referents
DSS	Discuss Speaker's Sentiments	to hold a conversation about speaker's non-observable thoughts and feelings
MRK	Marking	to express socially expected sentiments on specific occasions such as thanking or apologizing, or to mark some event
NCS	Negotiate Co-Presence and Separation	to manage the transition
NIA	Negotiate the Immediate Activity	to negotiate the initiation, continuation, ending and stopping of activities and acts; to direct hearer's and speaker's acts; to allocate roles, moves, and turns in joint activities
NFA	Negotiate Future Activity	to negotiate actions and activities in the far future
NFW	Negotiate Fantasy World Activities	to negotiate actions and activities within fantasy play
NMA	Negotiate Mutual Attention and Proximity	to establish mutual attentiveness and proximity or withdrawal
PRO	Performing Verbal Moves in an Activity	to perform verbal moves in a game or other activity by uttering the appropriate verbal forms
PSS	Negotiate Possession of Objects	to determine who is the possessor of an object
SAT	Showing Attentiveness	to demonstrate that speaker is paying attention to hearer
SDS	Self-Directed Speech	speaker engages in speech which is clearly not addressed to present hearer
TXT	Read Written Text	to read written text aloud

YYY	Uninterpretable Utterance	the interchange category could not be determined because of the nature of the utterance; the utterance was unintelligible due to background noise, overlapping speech, or orientation to the microphone

Speech Act Categories:

1. Directives and responses

Code	Category
AC	Acknowledge verbal or non-verbal communications
AD	Agree to do; agree to carry out act requested or proposed by other
AL	Agree to do for the last time
CL	Call attention to hearer by name or by substitute exclamations
CS	Counter suggestion; indirect refusal
DR	Dare; challenge hearer to perform action
GI	Give in; accept other's insistence or refusal
GR	Give reason; justify a request for action, refusal, prohibition, etc.
RD	Refuse to do; refuse to carry out act requested or proposed by other including refusal by giving excuses and reasons for non-compliance
RP	Request, propose, suggest action for hearer; proposed action might also involve speaker
RQ	Yes/No question about hearer's wishes, ability, and intentions which functions as a suggestion
SS	Signal to start performing an act; pace performance of acts by hearer
WD	Warn of danger

2. Speech elicitations and responses

Code	Category
CX	Complete text if so demanded
EA	Elicit onomatopoeic sounds
EC	Elicit completion of word or sentence
EI	Elicit imitation of word or sentence, either with or without explicit command
EX	Elicit completion of rote learned text
RT	Repeat, imitate other's utterance
SC	Complete statement or other utterance in compliance with request eliciting completion

3. Commitments and responses

Code	Category
FP	Ask for permission to carry out act by speaker
PA	Permit hearer to perform act
PD	Promise
PF	Prohibit, forbid hearer to perform act; protest hearer's act
SI	State intent to carry out act by speaker; description of one's on-going activity
TD	Threaten to do

4. Declarations and responses

Code	Category
DC	Declare, create a new state of affairs by declaration
DP	Create a make-believe reality by declaration
ND	Disagree with a declaration
YD	Agree to a declaration

5. Markings and responses

Code	Category
CM	Commiserate, express sympathy for hearer's distress
EM	Exclaim in distress, pain, or other negative emotional reactions
EN	Endearment, express positive emotion
MK	Mark occurrence of event
TO	Mark transfer of object to hearer
XA	Exhibit attentiveness to hearer

6. Statements and responses

Code	Category
AP	Agree with proposition expressed by previous speaker
ST	State, make a declarative statement
WS	Express a wish

7. Questions and responses

Code	Category
AA	Answer in the affirmative to yes/no question
AN	Answer in the negative to yes/no question
AQ	Aggravated question, express disagreement by re-

	asking question
EQ	Eliciting question
NA	Non-satisfying answer to question
QA	Answer a question with a wh-question
QN	Wh-question, ask a product-question
RA	Refuse to answer
SA	Answer a wh-question by a statement
TA	Answer to TQ
TQ	Limited alternative yes/no question
YA	Answer a question with a yes/no question
YQ	Yes/no question

8. Performances

Code	**Category**
PR	Perform verbal move in a game, answer to EA
TX	Read, recite written text aloud

9. Evaluations

Code	**Category**
AB	Approve of appropriate behaviour, express positive evaluation of hearer's or speakers acts
CR	Criticize, point out error in nonverbal act
DS	Disapprove, scold, protest disruptive behaviour as inappropriate
ED	Exclaim in disapproval or dismay
ET	Exclaim in surprise or enthusiasm
PM	Praise performance

10. Demands for clarification

Code	**Category**
RR	Request to repeat utterance

11. Text editing

Code	**Category**
CT	Correct verbal error, may be correction of either form or content

12. Vocalizations

Code	**Category**
YY	Utter a word like utterance without clear function, unintelligible vocalization

Third Level Codes:

Code	Category	Function
AT*	Affectionate talk	register of talk to babies used by Inuit mothers that is characterized by the chanting of short phrases or the addition of nonsense syllables onto word or grammatical constructions
IN	Nonverbal Communicative Acts	instances where communication was expressed either entirely nonverbally or were vocal/verbal but were interpretable only because of accompanying nonverbal behaviours
NL	Nonliteral Communicative Acts	sarcasm, teasing, or other intents which are expressed non-literally
SF	Speech for an Inanimate Object	utterances in which the speaker is speaking for an inanimate object

*Not included in INCA-A.

APPENDIX C

Absolute Frequency of Occurrence of Interchanges, Speech Acts, and Third Level Codes for Inuit Caregivers and Children

Caregivers' Interchanges at 16 Months

	Caregiver		
Interchange	Qaajia	Annie	Miaji
CMO	-	6	-
DCA	-	-	-
DCC	1	5	-
DFW	-	4	-
DHA	27	32	2
DHS	-	13	2
DJF	32	22	8
DNP	7	-	-
DRE	8	-	9
DRP	6	22	2
DSS	-	2	-
MRK	6	7	4
NCS	18	3	2
NIA	114	317	47
NFA	-	-	-
NFW	-	-	-
NMA	4	60	2
PRO	-	21	7
PSS	-	1	3
SAT	12	22	-
SDS	-	-	-
TXT	-	1	1
YYY	18	16	2

Caregivers' Interchanges at 20 Months

	Caregiver		
Interchange	Qaajia	Annie	Miaji
CMO	1	6	-
DCA	-	-	-
DCC	1	9	-
DFW	7	13	50
DHA	26	5	3
DHS	3	15	-
DJF	25	23	26
DNP	4	9	-
DRE	14	-	-
DRP	17	10	2
DSS	-	4	-
MRK	-	2	2
NCS	-	7	4
NIA	102	188	55
NFA	-	-	-
NFW	-	-	15
NMA	5	30	6
PRO	4	25	-
PSS	-	16	1
SAT	3	17	-
SDS	-	-	-
TXT	1	-	-
YYY	5	3	-

Caregivers' Speech Acts at 16 Months

Speech Act	Caregiver			Speech Act	Caregiver		
	Qaajia	Annie	Miaji		Qaajia	Annie	Miaji
AA	-	-	-	NA	-	-	-
AB	-	3	1	ND	-	-	-
AC	-	2	-	PA	-	-	-
AD	-	3	-	PD	-	-	-
AL	-	-	-	PF	14	42	3
AN	-	-	-	PM	-	-	-
AP	1	5	-	PR	2	21	8
AQ	-	-	-	QA	-	-	-
CL	9	39	2	QN	19	5	3
CM	-	3	-	RA	-	-	-
CN	-	-	-	RD	-	1	3
CR	-	1	-	RP	45	206	30
CS	1	1	2	RQ	-	3	-
CT	6	2	-	RR	1	5	-
CX	-	-	-	RT	37	17	8
DC	-	6	3	SA	-	2	-
DP	-	1	-	SC	-	-	-
DR	-	-	-	SI	4	7	3
DS	5	5	1	SS	-	3	1
DW	-	2	-	ST	42	42	4
EA	-	-	-	TA	-	-	-
EC	-	1	-	TD	-	-	-
ED	4	6	-	TO	6	6	1
EI	18	39	5	TQ	-	1	-
EM	-	1	-	TX	-	1	1
EN	-	1	-	WD	4	1	1
EQ	1	2	-	WS	-	-	-
ET	-	1	-	XA	12	22	-
EX	-	-	-	YA	-	-	-
FP	-	-	-	YD	-	-	-
GI	1	4	-	YQ	1	18	7
GR	2	4	-	YY	13	9	-
MK	5	10	4				

Caregivers' Speech Acts at 20 Months

Speech Act	Caregiver			Speech Act	Caregiver		
	Qaajia	Annie	Miaji		Qaajia	Annie	Miaji
AA	-	-	-	NA	-	-	-
AB	-	-	-	ND	-	-	-
AC	2	9	2	PA	-	1	-
AD	2	1	1	PD	1	1	-
AL	-	-	-	PF	23	37	2
AN	-	-	-	PM	-	-	-
AP	4	1	-	PR	2	3	-
AQ	-	-	-	QA	-	-	-
CL	2	16	6	QN	10	31	12
CM	1	3	-	RA	-	-	-
CN	-	-	-	RD	-	7	-
CR	-	1	1	RP	39	73	34
CS	2	5	-	RQ	-	11	3
CT	4	4	3	RR	-	8	-
CX	-	-	-	RT	7	10	5
DC	4	-	1	SA	1	3	7
DP	-	-	2	SC	-	1	-
DR	-	-	-	SI	1	3	12
DS	2	7	1	SS	-	10	1
DW	2	-	-	ST	64	39	34
EA	-	-	-	TA	-	-	-
EC	-	-	-	TD	-	2	-
ED	3	5	2	TO	3	5	1
EI	11	37	10	TQ	-	-	-
EM	-	-	1	TX	1	-	-
EN	-	-	-	WD	-	-	-
EQ	-	8	-	WS	-	-	-
ET	3	-	1	XA	3	17	-
EX	-	-	-	YA	-	-	-
FP	-	-	-	YD	-	-	-
GI	1	1	1	YQ	4	10	3
GR	4	2	1	YY	5	-	2
MK	3	10	15				

Caregivers' Third Level Codes at 16 Months

	Caregiver		
Third Level	Qaajia	Annie	Miaji
at	41	2	-
in	13	20	7
nl	15	7	7

Caregivers' Third Level Codes at 20 Months

	Caregiver		
Third Level	Qaajia	Annie	Miaji
at	8	3	-
in	6	4	-
nl	4	4	2

Children's Interchanges at 16 Months

	Child	
Interchange	Jini	Suusi
CMO	-	-
DCA	-	-
DCC	2	9
DFW	1	2
DHA	2	-
DHS	-	-
DJF	21	15
DNP	1	-
DRE	4	-
DRP	3	2
DSS	2	1
MRK	6	1
NCS	27	4
NIA	61	79
NFA	-	-
NFW	-	-
NMA	1	9
PRO	-	5
PSS	1	-
SAT	1	-
SDS	-	-
TXT	-	-
YYY	68	77

Children's Interchanges at 20 Months

	Child	
Interchange	Jini	Suusi
CMO	-	-
DCA	-	-
DCC	1	7
DFW	15	14
DHA	4	7
DHS	1	-
DJF	18	5
DNP	2	2
DRE	2	-
DRP	6	-
DSS	-	-
MRK	2	2
NCS	4	4
NIA	37	79
NFA	-	-
NFW	-	-
NMA	5	19
PRO	4	17
PSS	1	4
SAT	-	-
SDS	-	-
TXT	-	-
YYY	18	43

Children's Speech Acts at 16 Months

Speech	Child		Speech	Child	
Act	Jini	Suusi	Act	Jini	Suusi
AA	-	-	NA	-	-
AB	-	-	ND	-	-
AC	1	16	PA	-	-
AD	-	4	PD	-	-
AL	-	-	PF	2	12
AN	-	-	PM	-	-
AP	-	1	PR	1	5
AQ	-	-	QA	-	-
CL	27	3	QN	2	2
CM	-	-	RA	-	-
CN	-	-	RD	7	13
CR	-	-	RP	21	22
CS	-	-	RQ	-	-
CT	-	-	RR	2	8
CX	-	-	RT	14	14
DC	1	-	SA	-	2
DP	-	-	SC	-	-
DR	-	-	SI	-	2
DS	-	-	SS	-	-
DW	-	1	ST	21	11
EA	-	-	TA	-	-
EC	-	-	TD	-	-
ED	-	-	TO	14	1
EI	-	-	TQ	-	-
EM	5	4	TX	-	-
EN	-	-	WD	-	-
EQ	-	-	WS	-	-
ET	1	-	XA	1	-
EX	-	-	YA	-	-
FP	-	-	YD	-	-
GI	-	-	YQ	-	-
GR	-	-	YY	61	81
MK	20	2			

Children's Speech Acts at 20 Months

Speech Act	Child		Speech Act	Child	
	Jini	Suusi		Jini	Suusi
AA	2	1	NA	-	-
AB	-	-	ND	1	-
AC	1	8	PA	-	-
AD	1	-	PD	-	-
AL	-	-	PF	2	6
AN	-	-	PM	-	-
AP	1	-	PR	5	12
AQ	-	-	QA	-	-
CL	8	32	QN	-	-
CM	-	-	RA	-	-
CN	-	-	RD	8	18
CR	-	-	RP	11	21
CS	-	-	RQ	-	1
CT	-	-	RR	1	6
CX	-	-	RT	14	38
DC	1	-	SA	-	6
DP	1	-	SC	-	4
DR	-	-	SI	1	-
DS	-	1	SS	-	-
DW	3	1	ST	26	1
EA	-	-	TA	-	-
EC	-	-	TD	-	-
ED	-	-	TO	5	3
EI	-	-	TQ	-	-
EM	-	5	TX	-	-
EN	-	-	WD	-	-
EQ	-	-	WS	-	-
ET	1	-	XA	-	-
EX	-	1	YA	-	-
FP	-	-	YD	-	-
GI	-	-	YQ	-	-
GR	-	-	YY	23	37
MK	4	1			

Children's Third Level Codes at 16 Months

	Child	
Third Level	Jini	Suusi
in	24	19
nl	15	-
sf	-	-

Children's Third Level Codes at 20 Months

	Child	
Third Level	Jini	Suusi
in	16	10
nl	-	-
sf	3	11

APPENDIX D

Rank Order Distribution of Interchanges and Speech Acts for Inuit Caregivers and Children

Caregivers' Interchanges at 16 Months

	Caregiver		
Interchange	Qaajia	Annie	Miaji
CMO	18	11	18.5
DCA	18	20.5	18.5
DCC	12	12	18.5
DFW	18	13	18.5
DHA	3	3	9.5
DHS	18	9	9.5
DJF	2	5	3
DNP	8	20.5	18.5
DRE	7	20.5	2
DRP	9.5	5	9.5
DSS	18	15	18.5
MRK	9.5	10	5
NCS	4.5	14	9.5
NIA	1	1	1
NFA	18	20.5	18.5
NFW	18	20 5	18.5
NMA	11	2	9.5
PRO	18	7	4
PSS	18	16.5	6
SAT	6	5	18.5
SDS	18	20.5	18.5
TXT	18	16.5	13
YYY	4.5	8	9.5

Caregivers' Interchanges at 20 Months

	Caregiver		
Interchange	Qaajia	Annie	Miaji
CMO	14	13	16.5
DCA	19.5	20.5	16.5
DCC	14	10.5	16.5
DFW	6	8	1
DHA	2	14	6
DHS	11.5	7	16.5
DJF	3	4	3
DNP	9.5	10.5	16.5
DRE	5	20.5	16.5
DRP	4	9	7.5
DSS	19.5	15	16.5
MRK	19.5	17	7.5
NCS	19.5	12	5
NIA	1	1	2
NFA	19.5	20.5	16.5
NFW	19.5	20.5	16.5
NMA	7.5	2	4
PRO	9.5	3	16.5
PSS	19.5	6	9
SAT	11.5	5	16.5
SDS	19.5	20.5	16.5
TXT	14	20.5	16.5
YYY	7.5	15	16.5

Caregivers' Speech Acts at 16 Months

Speech Act	Caregiver			Speech Act	Caregiver		
	Qaajia	Annie	Miaji		Qaajia	Annie	Miaji
AA	45	54	43	NA	45	54	43
AB	45	24	17.5	ND	45	54	43
AC	45	29	43	PA	45	54	43
AD	45	24	43	PD	45	54	43
AL	45	54	43	PF	6	2.5	10
AN	45	54	43	PM	45	54	43
AP	21.5	17.5	43	PR	17.5	7	2.5
AQ	45	54	43	QA	45	54	43
CL	9	4.5	13.5	QN	4	17.5	10
CM	45	24	43	RA	45	54	43
CN	45	54	43	RD	45	37	10
CR	45	37	43	RP	1	1	1
CS	21.5	37	13.5	RQ	45	24	43
CT	10.5	29	43	RR	21.5	17.5	43
CX	45	54	43	RT	3	9	2.5
DC	45	14	10	SA	45	29	43
DP	45	37	43	SC	45	54	43
DR	45	54	43	SI	15	12	10
DS	12.5	17.5	17.5	SS	45	24	17.5
DW	45	29	43	ST	2	2.5	6.5
EA	45	54	43	TA	45	54	43
EC	45	37	43	TD	45	54	43
ED	15	14	43	TO	10.5	14	17.5
EI	5	4.5	5	TQ	45	37	43
EM	45	37	43	TX	45	37	17.5
EN	45	37	43	WD	15	37	17.5
EQ	21.5	29	43	WS	45	54	43
ET	45	37	43	XA	8	6	43
EX	45	54	43	YA	45	54	43
FP	45	54	43	YD	45	54	43
GI	21.5	20.5	43	YQ	21.5	8	4
GR	17.5	20.5	43	YY	7	11	43
MK	12.5	10	6.5				

Caregivers' Speech Acts at 20 Months

Speech Act	Caregiver			Speech Act	Caregiver		
	Qaajia	Annie	Miaji		Qaajia	Annie	Miaji
AA	48.5	50	46.5	NA	48.5	50	46.5
AB	48.5	50	46.5	ND	48.5	50	46.5
AC	22	13	15	PA	48.5	31	46.5
AD	22	31	22.5	PD	28.5	31	46.5
AL	48.5	50	46.5	PF	3	3.5	15
AN	48.5	50	46.5	PM	48.5	50	46.5
AP	10.5	31	46.5	PR	22	23.5	46.5
AQ	48.5	50	46.5	QA	48.5	50	46.5
CL	22	7	8	QN	5	5	4.5
CM	28.5	23.5	46.5	RA	48.5	50	46.5
CN	48 .5	50	46.5	RD	48.5	16.5	46.5
CR	48.5	31	22.5	RP	2	1	1.5
CS	22	19	46.5	RQ	48.5	8	11
CT	10.5	21	11	RR	48.5	14.5	46.5
CX	48.5	50	46.5	RT	6	10.5	9
DC	10.5	50	22.5	SA	28.5	23.5	7
DP	48.5	50	15	SC	48.5	31	46.5
DR	48.5	50	46.5	SI	28.5	23.5	4.5
DS	22	16.5	22.5	SS	48.5	10.5	22.5
DW	22	50	46.5	ST	1	2	1.5
EA	48.5	50	46.5	TA	48.5	50	46.5
EC	48.5	50	46.5	TD	48.5	26.5	46.5
ED	16	19	15	TO	16	19	22.5
EI	4	3.5	6	TQ	48.5	50	46.5
EM	48.5	50	22.5	TX	28.5	50	46.5
EN	48.5	50	46.5	WD	10.5	50	46.5
EQ	48.5	14.5	46.5	WS	48.5	50	46.5
ET	16	50	22.5	XA	16	6	46.5
EX	48.5	50	46.5	YA	48.5	50	46.5
FP	48.5	50	46.5	YD	48.5	50	46.5
GI	28.5	31	22.5	YQ	10.5	10.5	11
GR	10.5	26.5	22.5	YY	7	50	15
MK	16	10.5	3				

Children's Interchanges at 16 Months

Interchange	Child	
	Jini	Suusi
CMO	19.5	17.5
DCA	19.5	17.5
DCC	9	4.5
DFW	13	8.5
DHA	9	17.5
DHS	19.5	17.5
DJF	4	3
DNP	13	17.5
DRE	6	17.5
DRP	7	8.5
DSS	9	10.5
MRK	5	10.5
NCS	3	7
NIA	2	1
NFA	19.5	17.5
NFW	19.5	17.5
NMA	13	4.5
PRO	19.5	6
PSS	13	17.5
SAT	13	17.5
SDS	19.5	17.5
TXT	19.5	17.5
YYY	1	2

Children's Interchanges at 20 Months

	Child	
Interchange	Jini	Suusi
CMO	19.5	18
DCA	19.5	18
DCC	14	6.5
DFW	4	5
DHA	9	6.5
DHS	14	18
DJF	2.5	8
DNP	11	11.5
DRE	11	18
DRP	5	18
DSS	19.5	18
MRK	11	11.5
NCS	9	9.5
NIA	1	1
NFA	19.5	18
NFW	19.5	18
NMA	6	3
PRO	9	4
PSS	14	9.5
SAT	19.5	18
SDS	19.5	18
TXT	19.5	18
YYY	2.5	2

Children's Speech Acts at 16 Months

Speech Act	Child		Speech Act	Child	
	Jini	Suusi		Jini	Suusi
AA	41.5	42.5	NA	41.5	42.5
AB	41.5	42.5	ND	41.5	42.5
AC	15	3	PA	41.5	42.5
AD	41.5	10.5	PD	41.5	42.5
AL	41.5	42.5	PF	11	6
AN	41.5	42.5	PM	41.5	42.5
AP	41.5	18	PR	15	9
AQ	41.5	42.5	QA	41.5	42.5
CL	2	12	QN	11	14.5
CM	41.5	42.5	RA	41.5	42.5
CN	41.5	42.5	RD	8	5
CR	41.5	42.5	RP	3.5	2
CS	41.5	42.5	RQ	41.5	42.5
CT	41.5	42.5	RR	11	8
CX	41.5	42.5	RT	6.5	4
DC	15	42.5	SA	41.5	14.5
DP	41.5	42.5	SC	41.5	42.5
DR	41.5	42.5	SI	41.5	14.5
DS	41.5	42.5	SS	41.5	42.5
DW	41.5	18	ST	3.5	7
EA	41.5	42.5	TA	41.5	42.5
EC	41.5	42.5	TD	41.5	42.5
ED	41.5	42.5	TO	6.5	18
EI	41.5	42.5	TQ	41.5	42.5
EM	9	10.5	TX	41.5	42.5
EN	41.5	42.5	WD	41.5	42.5
EQ	41.5	42.5	WS	41.5	42.5
ET	15	42.5	XA	15	42.5
EX	41.5	42.5	YA	41.5	42.5
FP	41.5	42.5	YD	41.5	42.5
GI	41.5	42.5	YQ	41.5	42.5
GR	41.5	42.5	YY	1	1
MK	5	14.5			

Children's Speech Acts at 20 Months

Speech Act	Child		Speech Act	Child	
	Jini	Suusi		Jini	Suusi
AA	11.5	17	NA	43.5	43
AB	43.5	43	ND	17	43
AC	17	7	PA	43.5	43
AD	17	43	PD	43.5	43
AL	43.5	43	PF	11.5	9
AN	43.5	43	PM	43.5	43
AP	17	43	PR	7.5	6
AQ	43.5	43	QA	43.5	43
CL	5.5	3	QN	43.5	43
CM	43.5	43	RA	43.5	43
CN	43.5	43	RD	5.5	5
CR	43.5	43	RP	4	4
CS	43.5	43	RQ	43.5	17
CT	43.5	43	RR	17	9
CX	43.5	43	RT	3	1
DC	17	43	SA	43.5	9
DP	17	43	SC	43.5	12
DR	43.5	43	SI	17	43
DS	43.5	17	SS	43.5	43
DW	10	17	ST	1	17
EA	43.5	43	TA	43.5	43
EC	43.5	43	TD	43.5	43
ED	43.5	43	TO	7.5	13
EI	43.5	43	TQ	43.5	43
EM	43.5	11	TX	43.5	43
EN	43.5	43	WD	43.5	43
EQ	43.5	43	WS	43.5	43
ET	17	43	XA	43.5	43
EX	43.5	17	YA	43.5	43
FP	43.5	43	YD	43.5	43
GI	43.5	43	YQ	43.5	43
GR	43.5	43	YY	2	2
MK	9	17			

APPENDIX E

Overall Proportional Distribution and Rank Order Distribution of Interchanges for Inuit Caregivers and Children

Caregivers' Interchanges at 16 Months

Interchange	Proportional Distribution	Rank Order
CMO	0.7%	11.5
DCA	-	18.5
DCC	0.7%	11.5
DFW	0.5%	13
DHA	7.3%	3
DHS	1.6%	10
DJF	6.7%	4
DNP/DRE/DRP[a]	5.4%	5
DSS	0.2%	14
MRK/PRO[b]	4.2%	7
NCS	2.6%	9
NIA	53.4%	1
NFA	-	18.5
NFW	-	18.5
NMA	7.9%	2
PSS	0.1%	15.5
SAT	4.2%	7
SDS	-	18.5
TXT	0.1%	15.5
YYY	4.2%	7

[a]The proportions for each of these interchange types separately are DNP (0.9%), DRE (1.0%), and DRP (3.5%). [b]The proportions for each these interchanges separately are MRK (1.6%) and PRO (2.6%).

Caregivers' Interchanges at 20 Months

Interchange	Proportional Distribution	Rank Order
CMO	1.2%	13.5
DCA	-	18.5
DCC	1.7%	11
DFW	3.3%	7.5
DHA	5.2%	5
DHS	3.0%	9
DJF	8.0%	3
DNP/DRE/DRP[a]	9.0%	2
DSS	0.7%	15
MRK/PRO[b]	5.1%	6
NCS	1.2%	13.5
NIA	48.3%	1
NFA	-	18.5
NFW	-	18.5
NMA	5.8%	4
PSS	2.7%	10
SAT	3.3%	7.5
SDS	-	18.5
TXT	0.2%	16
YYY	1.3%	12

[a]The proportions for each of these interchange types separately are DNP (2.2%), DRE (2.3%), and DRP (4.5%). [b]The proportions for each these interchanges separately are MRK (0.3%) and PRO (4.8%).

Children's Interchanges at 16 Months

Interchange	Proportional Distribution	Rank Order
CMO	-	18.5
DCA	-	18.5
DCC	2.7%	6
DFW	0.7%	9.5
DHA	0.5%	11
DHS	-	18.5
DJF	8.9%	3
DNP/DRE/DRP[a]	2.4%	8
DSS	0.7%	9.5
MRK/PRO[b]	2.9%	5
NCS	7.7%	4
NIA	34.6%	2
NFA	-	18.5
NFW	-	18.5
NMA	2.5%	7
PSS	0.1%	12.5
SAT	0.1%	12.5
SDS	-	18.5
TXT	-	18.5
YYY	35.8%	1

[a]The proportions for each of these interchange types separately are DNP (0.2%), DRE (1.0%), and DRP (1.2%). [b]The proportions for each these interchanges separately are MRK (1.7%) and PRO (1.2%).

Children's Interchanges at 20 Months

Interchange	Proportional Distribution	Rank Order
CMO	-	18
DCA	-	18
DCC	2.5%	9.5
DFW	9.7%	3
DHA	3.4%	8
DHS	0.3%	12
DJF	7.1%	6
DNP/DRE/DRP[a]	3.7%	7
DSS	-	18
MRK/PRO[b]	7.7%	4
NCS	2.5%	9.5
NIA	35.9%	1
NFA	-	18
NFW	-	18
NMA	7.4%	5
PSS	1.5%	11
SAT	-	18
SDS	-	18
TXT	-	18
YYY	18.9%	2

[a]The proportions for each of these interchange types separately are DNP (1.2%), DRE (0.6%), and DRP (1.9%). [b]The proportions for each these interchanges separately are MRK (1.2%) and PRO (6.5%).

APPENDIX F

Overall Proportional Distribution and Rank Order Distribution of Speech Acts for Inuit Children

Children's Speech Acts at 16 Months

Speech Act	Proportional Distribution	Rank Order	Speech Act	Proportional Distribution	Rank Order
AA	-	44	NA	-	44
AB	-	44	ND	-	44
AC	4.2%	8	PA	-	44
AD	1.0%	14.5	PD	-	44
AL	-	44	PF	3.5%	10
AN	-	44	PM	-	44
AP	0.2%	20	PR	1.5%	13
AQ	-	44	QA	-	44
CL	7.4%	4	QN	1.0%	14.5
CM	-	44	RA	-	44
CN	-	44	RD	4.9%	7
CR	-	44	RP	10.6%	2
CS	-	44	RQ	-	44
CT	-	44	RR	2.5%	11
CX	-	44	RT	6.9%	5
DC	0.2%	20	SA	0.5%	16.5
DP	-	44	SC	-	44
DR	-	44	SI	0.5%	16.5
DS	-	44	SS	-	44
DW	0.2%	20	ST	7.9%	3
EA	-	44	TA	-	44
EC	-	44	TD	-	44
ED	-	44	TO	3.7%	9
EI	-	44	TQ	-	44
EM	2.2%	12	TX	-	44
EN	-	44	WD	-	44
EQ	-	44	WS	-	44
ET	0.2%	20	XA	0.2%	20
EX	-	44	YA	-	44
FP	-	44	YD	-	44
GI	-	44	YQ	-	44
GR	-	44	YY	35.1%	1
MK	5.4%	6			

Children's Speech Acts at 20 Months

Speech Act	Proportional Distribution	Rank Order	Speech Act	Proportional Distribution	Rank Order
AA	0.9%	17	NA	-	46.5
AB	-	46.5	ND	0.3%	22.5
AC	2.8%	8	PA	-	46.5
AD	0.3%	22.5	PD	-	46.5
AL	-	46.5	PF	2.5%	9.5
AN	-	46.5	PM	-	46.5
AP	0.3%	22.5	PR	5.3%	7
AQ	-	46.5	QA	-	46.5
CL	12.0%	3	QN	-	46.5
CM	-	46.5	RA	-	46.5
CN	-	46.5	RD	8.0%	6
CR	-	46.5	RP	9.9%	4
CS	-	46.5	RQ	0.3%	22.5
CT	-	46.5	RR	2.2%	11
CX	-	46.5	RT	16.1%	2
DC	0.3%	22.5	SA	1.9%	12
DP	0.3%	22.5	SC	1.2%	15.5
DR	-	46.5	SI	0.3%	22.5
DS	0.3%	22.5	SS	-	46.5
DW	1.2%	15.5	ST	8.4%	5
EA	-	46.5	TA	-	46.5
EC	-	46.5	TD	-	46.5
ED	-	46.5	TO	2.5%	9.5
EI	-	46.5	TQ	-	46.5
EM	1.5%	13.5	TX	-	46.5
EN	-	46.5	WD	-	46.5
EQ	-	46.5	WS	-	46.5
ET	0.3%	22.5	XA	-	46.5
EX	0.3%	22.5	YA	-	46.5
FP	-	46.5	YD	-	46.5
GI	-	46.5	YQ	-	46.5
GR	-	46.5	YY	18.5%	1
MK	1.5%	13.5			