



CHAPTER 3

DESCRIBING PEER INTERACTIONS WITH A PERSON WHO USES AAC: MOVING TOWARDS AN ANALYTICAL SYSTEM

3.1 INTRODUCTION

A comprehensive description of interaction between a person who uses AAC and his/her peers requires an analysis of the immediate interaction, but also necessitates some information about the peers, their attitudes towards the individual who uses AAC in addition to the perspective of the person using AAC.

This chapter focuses on the description of measures that could be used to describe the psychosocial background of peer interaction, for example the self-evaluation of the person who uses AAC as well as factors that need to be considered in the development of an analytic system for interaction. Firstly, measures for illustrating the psycho social background are described after which information is provided about analytical systems that can be used to describe interaction between a person who uses AAC and peers in natural contexts, such as the classroom.

3.2 THE COMPLEXITY OF COMMUNICATION

Communication is a dynamic, complex and multi-faceted interactive process that takes place between two or more persons. Each person brings to the interaction their attitudes, beliefs, perspectives, prior experiences, knowledge of their relationship with the other interactants, unique communication style, range of communication strategies, world knowledge, understanding of socio-cultural norms, motivations and aims or goals for the interaction. Communication is achieved by a variety of different modes and the interactive behaviours of the individuals involved constantly effect the understanding and behaviours of the other individuals involved in a complicated process that is primarily managed by the codes and rules of social interaction (Kraat, 1987).

Different contexts require different forms and content of language necessitating not only knowledge of language but of the social cultural rules of language within social contexts (Kraat, 1987). Every individual has his or her own style of interaction and chooses the language and modes needed in attempting to accomplish the specific function of the interaction (Kraat, 1987). During all stages of life but particularly in adolescence, the social functions achieved through interactions are important (Light, 1997a). It is also during adolescence that the value placed on the psychosocial goals of interaction such as reflecting the individual's personality, status or role relationships are intense. Interactions between adolescent peers are directly influenced by self-evaluation, appraisal of one another and the socio-metric status of the peers involved in the interaction. These psychosocial dimensions must also be investigated and described in studies involving the description of interactions involving adolescents who use AAC.

The environment in which communication occurs also influences the interaction, and social rules dictate what is appropriate for a specific environment. Different contexts within the environment will result in adaptations to the language used, the time, style and length of the interaction (Kraat, 1987). Within the classroom environment very different interactive behaviours could be expected between the same peers depending on the context, for example during a test as opposed to working on a group project. Knowledge of appropriate interaction behaviours for given situations and contexts increases during adolescence.

Interactions involving persons who use AAC are inherently multifaceted by virtue of the multimodal nature of AAC and the effect of the AAC system used on the interactional process itself. Some of the factors that impact on the communication process include:

- i. the attitudes and beliefs of the communication partner
- ii. the behaviours of the speaking partner
- iii. the multiple modes of communication some used simultaneously
- iv. the use of a device and the characteristics of the device
- v. the format of the message formulation and transmission
- vi. issues of positioning and mobility.

All of the above factors as well as the abilities of the person using AAC have differential effects on the communication process and descriptions of interactions need to address how the interactants adapt to each other in negotiating meaning and achieving their goals of communication.

Communicating by means of multi-modal AAC systems allows certain aspects of conversation to be successfully achieved whereas other components remain difficult or impossible (Kraat, 1987). Even those aspects completed successfully require both the person using AAC and the communication partner to make adaptations to interact successfully (Kraat, 1987). Voice output communication devices are far from equivalent to natural speech with a major constraint being the slower rate of communication (Kraat, 1987).

Thus the researcher using observational data to investigate interactions between persons using AAC and speaking partners needs to make decisions regarding:

- i. measures to define and describe the psychosocial background of the person using AAC
- ii. the optimal method of collecting the observational data
- iii. the notational system that will be used in recording the data
- iv. the transcription system and principles including the division of the transcript into segmental units
- v. the coding of the transcript and finally
- vi. the analytical system to be applied to the coded data.

The importance of each of these factors will be determined largely by the purpose of the specific research project.

3.3 MEASURES TO DESCRIBE THE PSYCHOSOCIAL BACKGROUND

Relationships develop between speaking persons when there is sharing, interaction or participation between the individuals. This is also true of relationships between a person who uses AAC and speaking partners (Warrick, 1988). Interactions and relationships between individuals have the potential to further psychosocial growth (Warrick 1988). There is a plethora of measures used to describe the psychosocial background of interactants. Measures that appeared pertinent to describing the psychosocial background of adolescents who use AAC are briefly described within the framework of:

- (i) peer referenced assessment procedures,
- (ii) self-report measures and
- (iii) techniques to describe the evaluation by significant adults of the social interaction of an adolescents who use AAC with his/her peers.

3.3.1 Peer Referenced Assessment and Evaluation

Peer-referenced assessment strategies have been used extensively to identify the socio-metric status of children and adolescents for social skills training, to select children and adolescents for social skills training as well as to measure the outcomes of social skills training programmes (Gresham & Little, 1993).

3.3.1.1 Sociometric measures

The degree to which peers accept an adolescent or pre-adolescent into their group indicates that individual's social status. Peers have an unequalled position in assessing another's social status and behaviour (Gresham & Little, 1993).

Possible socio-metric measures include:

- i. Simple Nomination procedures

Peer nomination procedures are the most commonly used socio-metric measure to gauge whether children are liked or disliked by their peers (Gresham & Little, 1993). This generally involves asking members of a group, for example a class, to nominate one or more children according to set criteria such as who they like

to play with or would prefer to do a project with. Options include a fixed or unlimited number of nominations, the inclusion of negative evaluations, or a weighting system such as allocating rank order to the nominations (Gresham & Little, 1993).

i. Peer rating measures

In peer rating measures each member of a peer group rate every other member of the group on a Likert-type scale according to set parameters such as how well they like the peer (Gresham & Little, 1993).

ii. Peer Assessment

Using either open-ended descriptions, structured questionnaires or interviews group members rate peers on their behaviour as opposed to their attraction to the peer (Gresham & Little, 1993).

3.3.1.2 Peer evaluation of communication of adolescents using AAC

No specific measures were found relating to the peer evaluations of the communication of adolescents who use AAC. The Partners in Augmentative Communication Training (PACT), child and partner rating scales were published as part of the PACT resource guide for interaction facilitation training for children by Culp and Carlisle (1988). The rating scales were piloted in July 1986 with a sample group of 11 children and their primary care takers, 10 mothers and one father (Culp & Carlisle, 1988). The PACT rating scales were designed to evaluate the attitudes of specific dyads, a child who uses AAC and a communication partner (Culp & Carlisle, 1988). The child's perception of the attitudes of the partner to their communication and the partner's perception of the child's attitudes to communication are also investigated by the PACT scales (Culp & Carlisle, 1988).

3.3.2 Self-report

Numerous self-report questionnaires and scales are used in the assessment of social skills, self concept, attitudes and values of both adolescents and children (Gresham & Little,

1993). Self-report measures are an important source of information as they offer the unique perspective of the person himself.

3.3.2.1 Multidimensional self concept scale

The Multidimensional Self Concept Scale (MSCS) was devised to provide a multidimensional assessment of self concept (Bracken, 1992). It presumes that self concept develops in an organised way according to behavioural principles (Bracken, 1992). The MSCS consists of a 150-item, 4-point Likert-type self report scale. It was designed as a comprehensive assessment of global self concept and as a measure of six dimensions of self concept, namely: social, competence, affect, academic, family and physical (Bracken, 1992). It was devised for children and adolescents from Grade 5 through Grade 12 (ages 9-19 years) and was standardised on a sample of 2501 students of both regular and special education programmes in major centers of the United States of America (Bracken, 1992).

3.3.2.2 Self description questionnaire II

The Self Description Questionnaire II (SDQ II) is a 102-item self report scale that was designed to measure multiple dimensions of self-concept (Marsh, 1990). It was devised for adolescents in Grades 7 through 10 and a 6-point Likert scale format is used (Marsh, 1990). The SDQ II assesses three areas of academic self concept, seven areas of non-academic self concept and a general self concept (Marsh, 1990). It consists of the following 11 scales, physical abilities, physical appearance, opposite-sex relations, same-sex relations, parent relations, honesty-trustworthiness, emotional stability, math, verbal, general school and general self concept (Marsh, 1990). Results on these scales are summed to yield a total self concept scale. Norms are based on the responses of 5,494 Australian students and are presented for each of the scales and for the total self concept scale (Marsh, 1990).

3.3.2.3 Interviews

Interviewing is a widely used technique by researchers to elicit qualitative information. According to Miller (1991) interviews may take one of three formats as outlined in Table 3.1.

Table 3.1 Interview Formats

Interview Type	Method
Structured Interview (Formal interview)	A detailed instrument that contains closed and /or open questions that have been prepared by the researcher and are usually presented in a pre-determined sequence. This is the most highly structured format and may include socio-metric scales or questionnaires.
Focused Interview (Intensive interview)	The researcher knows in advance which topics, experiences or themes he wants to investigate and focuses attention on these. Less rigid than the structured interview and probing for more information by encouraging respondents to digress or expand on themes is encouraged.
Free Story Interview	The least structured format in which the interviewee(s) are encouraged to speak openly expressing their opinions about the subject under investigation. Completely open ended and used when the researcher wishes to examine in depth the opinions or experiences of individual respondents.

Interviews may be completed individually or in small groups. Whether the interview is successful or not will largely depend on the ability of the interviewer to establish rapport with the respondents and to listen attentively and actively to respondents (Miller, 1991). The analysis of data obtained by this method, especially where open ended questions are used, needs to be carefully coded and independent raters are required in order to establish the reliability of the coding the validity of the results (Miller, 1991).

3.3.2.4 PACT user scale

Discussed in 3.3.1.2 the PACT includes a user scale to determine the attitudes of the child or adolescent who uses AAC in addition to those of the communication partner (Culp & Carlisle, 1988). The child's perception of the attitudes of the partner to their communication is also investigated by the PACT scales (Culp & Carlisle, 1988).

3.3.3 Evaluation of Social Interaction by Significant Adults

3.3.3.1 Interactive checklist for augmentative communication

The Interactive Checklist for Augmentative Communication (INCH) was designed to assist AAC clinicians to assess and describe the factors required for successful AAC in natural settings (Bolton & Dashiell, 1991). It concentrates on three major areas of interaction referred to by the authors as strategies, modes and contexts (Bolton & Dashiell, 1991). It was designed as a flexible tool and does not have standardised norms or standardised procedures of administration and is designed to provide a description of the baseline interactive skills of the person using AAC (Bolton & Dashiell, 1991). The INCH also provides a framework for building communication competence within the natural settings based on the checklist findings of which strategies need to be trained; who needs to be trained (person using AAC and/or the partners) and the contexts in which the strategies need to be trained (Bolton & Dashiell, 1991)

3.3.3.2 PACT partner scales

As discussed in 3.3.1.2 the PACT rating scales were designed to evaluate the attitudes of any specific dyad of a child who uses AAC and a communication partner (Culp & Carlisle, 1988). They are thus appropriate for determining attitudes of significant adults to a child or adolescent who uses AAC

3.3.3.3 Interviews

The strategy of using interviews was discussed in 3.3.2.3. It is a powerful and appropriate tool to probe attitudes (Miller, 1991). Some of the pertinent advantages and disadvantages of interviews are presented in Table 3.2 below.



Table 3.2 Advantages and Disadvantages of Interviews

Advantages of Interviews	Disadvantages of Interviews
Supplementary information can be obtained by probing opinions or beliefs expressed by respondents.	Especially in less structured interviews the respondent may go off topic leading to insufficient or superfluous data.
More spontaneous responses are captured as opposed to written questionnaires or scales (Miller, 1991).	They are time consuming.
Recall of relevant information is facilitated by orientating the respondent to the topic.	Data may be distorted by interviewer bias.
The interviewer is able to observe the emotional responses to questions. The topic or situation may be handled more carefully leading to greater insight.	
Open ended questions or probing can elicit information that might otherwise not have been revealed leading to greater depth of data.	
Misinterpretations of questions can be rectified.	

3.4 TOWARDS A SYSTEM FOR DESCRIBING INTERACTIONS INVOLVING A PERSON WHO USES AAC

To consistently and accurately describe the complexity of the interactions of a person who uses AAC with peers requires the following:

- i. A reliable method to accurately record the multimodality of interactions of the person using AAC and his/her partner(s) for later observation and analysis.
- ii. The spatial layout and terminology to be used in the transcript.
- iii. The notational conventions to be used in the transcript.
- iv. The theoretical and methodological basis for the transcript
- v. The basis for the segmentation of the transcript into segments and units that will allow for further coding and analysis.

3.4.1 Recording Observational Data

Recording interactions of persons using AAC with speaking partners in natural contexts presents difficulties. Using only audiotapes has been found to be unsatisfactory due to the lack of information recorded with respect to non-verbal modes of communication and contextual information (Kraat, 1987). Videotaping has been widely used and recording with audiotapes and observational techniques, including on-line coding, in addition to

videotapes has been found to be necessary in some studies (Kraat, 1987). To measure the influence of AAC intervention in a natural context such as the classroom it would be necessary to accurately record the interactions of adolescents who use AAC with peers.

The evidence would need to be accurate and verifiable so that measurements could accurately reflect both:

- i. increases in the frequency and extent of successful initiations with peers by the adolescents who use AAC
- ii. increases in the number of initiations and responses made to the adolescents who use AAC by peers (Calculator, 1999).

In order to closely compare relatively large segments of interaction, videotaping would provide both verbal and non-verbal information that could be carefully reviewed as often as necessary to provide an accurate portrayal of interactions taking place between AAC users and peers. Videotaping would provide a permanent record that would be open to verification by inter-raters, research participants as well as other researchers.

Videotaping would be the preferred means of recording interactions due to the wealth of information that is recorded by this method compared to audiotaping and other observational recording methods.

3.4.2 Definitions

The problem of technical definitions and terminology describing communication is exceptionally intense as research in this area has been carried out by different disciplines including psychologists, educationalists, sociologists, linguists and anthropologists (McTear, 1985). Research into natural conversations has led to the prolific creation of terminology and classification systems that are frequently used with conflicting definitions (McTear, 1985).

The problem is exacerbated when terminology and classification systems from research into spoken communication are transferred to the field of AAC and applied to situations that are very different in nature (Smith & Grove, 2001). The word 'utterance' refers to spoken words and is therefore not suited to persons who use AAC who typically use

multi-modal means of conveying messages. Within AAC research, alternatives to utterance have included “communicative function episode” (Letto, Bedrosian, & Skarakis-Doyle, 1994); “message formulation episode” (Higginbotham, 1989) and “discourse unit” (Light, Collier, & Parnes, 1985a).

3.4.3 Notational Conventions

Various notational conventions when transcribing the discourse of persons who use AAC and their speaking partners have been used by researchers. Selected notation conventions used by AAC researchers in transcribing interactional behaviours are detailed in Table 3.3.

Table 3.3 Definitions of notations and theoretical basis

Notation Convention used	Meaning of the notation	Theoretical basis
Words italicized	Naturally spoken utterance	Von Tetzchner, & Jensen (1996).
Words in quotation signs	Meanings of words produced by facial expressions or body movements e.g. shakes head “no”.	Von Tetzchner, & Jensen (1996).
Words/sentences italicized and in quotation signs	Words/sentences in synthesized speech using DeltaTalker™	Von Tetzchner, & Jensen (1996).
Words with each letter separated by a hyphen and underlined	Words that were spelled out e.g. O-k-a-v-a-n-g-o	Von Tetzchner, & Jensen (1996).
Words or text marked by a pair of angle brackets marked with a capital letter X e.g. <X becauseX>	Words that are not clearly audible to the transcriber i.e. their accuracy is not certain but they represent the best guess of the transcriber	Du Bois, Schuetze-Coburn, Cumming, & Paolino (1993).
Words or parts of words represented by the capital letter X.	Words and or syllables that were not intelligible and could not be deciphered either by the transcriber or person using AAC.	Du Bois, Schuetze-Coburn, Cumming, & Paolino (1993).
A # signifies the end of an interactional event.	The end of a single or series of initiations and responses that constitute an interactional event.	Du Bois, Schuetze-Coburn, & Paolino (1993) The # was used as the morphosyntactic boundary of a clause.
L = movement towards left R = movement towards right ↑ = movement or eye-gaze up ↓ = movement or eye-gaze down → = eye-gaze to right ← = eye-gaze to left □ = eye-gaze to camera	Hand movements, body orientation, facial expressions and eye-gaze notated.	Kraat (1987).

3.4.4 Transcription in Interactive Research

Research into the complex processes of AAC should be theoretically grounded (Müller & Soto, 2001). The bias and the assumptions that support the methodology should also be explained (Higginbotham, Mathy-Laikko, & Yoder, 1988). Light (1988) suggests that more than a third of research studies involving the interaction of individuals who use AAC have omitted analysis of the partner behaviours. In determining the communicative competence of a person who uses AAC it is vital to consider the interactive process from a social perspective, including the perspectives of both persons using AAC and their partners (Light 1988). Discourse analysis considers the structure, context and processes of conversations between speaking partners from a social perspective and could provide a methodological basis for the analysis of interactions of persons who use AAC with their speaking partners (Müller & Soto, 2001).

Discourse analysis presumes language as constructing social life and not merely as reflecting it (Coyle, 1995). Discourses are viewed as the basic elements that construct social reality and by examining discourses analysts can gain understanding of social interactions and social life (Coyle, 1995). It thus focuses on how people use language to construct social realities by selecting from their linguistic resources to create their version of events within social settings (Coyle, 1995). A further assumption of discourse analysis according to Coyle (1995) is that all discourses have an action orientation in that they are used to achieve social purposes (Coyle, 1995). Adapted systems of discourse analysis have been used in AAC research, for example, in a study on the discourse patterns of young children who had physical disabilities and LNFS when interacting with their primary caregivers (Light et al., 1985a). Within the field of discourse analysis many systems of transcription are employed and the way researchers select to present their data has significant consequences for the interpretation of data (Müller & Soto, 2001).

As transcripts of videotapes provide the primary data for interactive research involving AAC and constitute the central evidence it is crucial to determine the optimal system for transcribing, coding and analysing data obtained from videotapes. Müller and Soto (2001) contend that research in AAC requires a systematic and standardised approach to both notation and transcription of data. Yet, according to Hunt Berg (2001) there are no standardised coding and transcription system that are flexible enough to adequately describe and interpret the variety and complexity of the communication modes and strategies employed by AAC users. Thus, the development of systems of outcome measurement is critical, as these systems will determine whether the changes attributed to AAC interventions are valid. Selected methods should be well defined, precise and applied consistently (Smith & Grove, 2001). To summarise, it is vital that researchers in AAC clearly describe the theoretical and methodological basis that they select for the collection, transcription and coding methods selected (Soto & Grove, 2001).

3.4.4.1 Principles of transcription employed in AAC research

The theoretical basis of transcription principles used by AAC researchers in transcripts is described in Table 3.4.

Table 3.4 Definitions of transcription principles and theoretical basis

Principle Used	Theoretical Basis and Rationale	Reference
The transcription should provide a functional perspective of the interactive behaviours of the participants. A macro rather than micro analysis should be provided.	Focused on the management of interactions by the participants at relational, content and outcome levels irrespective of the mode of communication used	Gumperz & Berenz (1993).
The context is an important and integral part of the interaction behaviour and must be included in the description of interactions in the transcript	Context to include the physical environment including access to communication techniques and strategies by the person using AAC; the functional context including the activity during which the interactions take place, the social context including whether the interaction took place between peers who were friends or assigned to work together; the language context including use of other languages and the cultural context including the adolescent peer group and teacher's values and expectations.	Light (1997b). (Contexts of language learning)
The verbal and nonverbal actions of the communication partner(s) should be included in the transcript of the interaction behaviours of the AAC user.	Communication is a transactional and dynamic process between 2 or more individuals and the partner's actions and responses are integral to understanding the interactional behaviours of the person using AAC. The shared knowledge and assumptions between the participants is an integral part of the interaction.	Kraat (1987). McTear (1985). Stubbs (1983).
The coding of each message should adequately describe it in a systematic way.	The coding should outline three levels of description: (i) the topics such as the mode, (ii) the categories within a topic such as vocalization, facial expression etc. and (iii) the codes, that is the numeric abbreviation that forms the coding record itself.	Lampert & Ervin-Tripp (1993).
The spatial orientation of the transcript layout should reflect: i. Interactions of the person using AAC and partners should be aligned in same column in sequential order, left to right and top to bottom. ii. Verbal and nonverbal behaviour should be presented in running text format. iii. Verbal and non-verbal behaviour to be placed in same column. iv. Context to be described briefly with respect to interactions	i. Equal prominence given to both augmented user and speaking peers. ii. Equal value given to both verbal and non verbal interactive behaviour. More readable and non verbal behaviour of equal visual saliency. iii. Interactive behaviours shown as integrated and complementary. iv. Context revealed as vital component of the interactive behaviours.	Müller & Soto (2001). Edwards & Lampert (1993). Müller & Soto (2001). Bloom (1993).

3.4.4.2 Segmentation of interactions

Before videotaped discourse can be analysed it is necessary to select suitable coding and transcription systems to provide a framework for organising the discourse. At the research symposium of the International Society for AAC in August 2000 the difficulties in transcribing the interactions of AAC users with respect to the following issues were highlighted:

- (i) the difficulty establishing the unit of analysis,
- (ii) the tendency to privilege augmented spoken utterances over non-verbal forms of communication, and
- (iii) the difficulty inherent in transcribing simultaneous multi-modal communicative behaviour using traditional orthography to represent nonverbal modes” (Soto & Grove, 2001, p.12).

The problem of defining both turns and utterance boundaries as units of analysis was noted to be particularly relevant (Smith & Grove, 2001).

The preparation of a transcript begins with the decision of how to divide up the transcript into the basic unit of analysis which can be of any size for example an exchange, utterance or word etc. depending on the purpose of the transcript (Lampert & Ervin-Tripp, 1993). However, the unit of analysis must remain constant and be consistent with the objectives of the study (Lampert & Ervin-Tripp, 1993). From a developmental perspective the most elementary form of turn taking is the initiation followed by a response (I/R) (McTear, 1985). Conversational exchanges develop from the I/R to the three part initiation-response-follow-up exchange (I/R/F) (McTear, 1985). Following this developmental progression the next stage includes utterances that not only respond to the preceding utterance but also at the same time initiate a further response and in this way create continuity in conversation leading to open ended exchanges (McTear, 1985).

In other discourse analysis systems the process of transcribing begins with the segmentation of the interaction into coherent experiential segments, termed events (Gumperz & Berenz, 1993). Such extended segments may be referred to as interchanges

(Stubbs, 1983). In the analysis of spoken discourse these events are generally related to both content order and rhythmic regulation (Gumperz & Berenz, 1993). These events or interchanges are then segmented into smaller units for analysis. In the analysis of spoken conversation or discourse there are established conventions for segmentation into “conversational turns” which in turn consist of one or more “utterances” (Smith & Grove, 2001).

Many factors are used to determine turn boundaries in spoken language including pausing, changes in prosody such as tone or rhythm, grammatical clues, semantic criteria and gestural or other non-verbal cues (McTear, 1985; Smith & Grove, 2001). Different researchers into spoken language have defined utterance boundaries in different ways and the identification of utterances within a conversational exchange may differ significantly (Smith & Grove, 2001). Pausing, by the holding of manual signs or hand relaxation, is among the many ways that signers signal turn and utterance boundaries in sign languages (Smith & Grove 2001). But Smith and Grove (2001) point out that to determine boundaries in both spoken and signed discourse can be very difficult. When discourse involves an individual using AAC the difficulty in identifying boundaries is compounded (Smith & Grove, 2001).

The proposed solutions to defining segmental boundaries within previous AAC research are summarised in Table 3. 5. Please note that for accuracy in reflecting what was proposed the terminology used in the table is that of the referenced researchers and reflects some terminology that is not used currently.

Table 3.5 Definitions of segmental boundaries in AAC Research

AAC Method	Description of Definition	Study	Researchers
Communication board	<p>Utterances are composed of one or more events (exchanges). Communication board users often require several events by both partners to complete a single utterance due to direct repetitions of the word(s) pointed to on the board. Explicit feedback from the aided communicator to signal that a turn or utterance is finished.</p>	Strategies for the prevention and repair of communication breakdown in interactions with communication board users	Fishman, Timler, & Yoder (1985).
Communication board	<p>Guidelines for determining utterance boundaries:</p> <ol style="list-style-type: none"> i. As a convention, the first communication by the nonspeaking board user (NSP) is considered the beginning of an utterance. ii. Communication by the NSP following the completion of a previous utterance is considered the beginning of the next utterance. iii. Events produced by the speaking partner that function as a check on the accuracy with which the message was received, are considered components of the NSP's utterance since they serve to prevent breakdowns. iv. When a speaking partner (SP) attempts to guess an unintelligible or incomplete message, the NSP must also confirm the accuracy of the guess before the utterance is completed. v. A simple response to a yes/no question is considered one completed utterance. This is in contrast to a confirmation, which occurs within the breakdown. vi. The completion of an utterance may be determined by the onset of a new utterance. vii. Confirmations are often embedded in utterances. Several small breakdowns or strategies used to prevent breakdowns may occur within the formulation of one utterance. viii. Elaborations by the SP are not included in the NSP utterance if they add new information. ix. On occasion, breakdowns cannot be repaired and an intended utterance is abandoned. These are coded as incomplete utterances. 	Strategies for the prevention and repair of communication breakdown in interactions with communication board users	Fishman et al., (1985).

AAC Method	Description of Definition	Study	Researchers
Communication board using Blissymbol display or Blissymbol and picture displays	<p>Communicative turn: a unit of discourse “ defined by a pronounced pause in which the partner might or might not take the floor” (Kaye & Charney, 1980, p.214 quoted in Light, Collier and Parnes 1985 a)</p> <p>Turn boundaries were demarcated either by a partner taking the floor or by a pause of 1 second or greater in length.</p>	<p>Communicative interaction between young nonspeaking physically disabled children and their primary caregivers: Part I – Discourse patterns.</p>	<p>Light et al., (1985a).</p>
Communication boards with or without electronic output display	<p>Message formulation episodes</p>	<p>The interplay of communication device output mode and interaction style between nonspeaking persons and their speaking partners.</p>	<p>Higginbotham (1989).</p>
Use of real object in structured play situation.	<p>Turns for the partner were defined as speech/vocal and/or gestural possession of the floor. Turns for the child were defined as vocal, smile, eye gaze, and/or gestural possession of the floor. Within each turn, one or more message units were transcribed and segmented. Segmentation procedures were as follows:</p> <ol style="list-style-type: none"> i. a message unit for speech productions involved a complete or incomplete utterance as defined by terminal intonation contours and pause time (Miller, 1981). ii. a vocal message unit involved the production of a vowel, consonant, or any combination of the two as defined by pause time iii. a gestural message unit included a single gesture on the part of the child iv. an eye gaze message unit involved the child’s use of direct eye contact with an object on the communication board v. a message unit for a smile involved any extension of the lips away from rest position as well as any retraction of the lips to rest position 	<p>Application of Vygotskian developmental theory to language acquisition in a young child with cerebral palsy.</p>	<p>Letto et al., (1994).</p>
VOCA (LightTalker™)	<p>“Speaking “ turns for the AAC user were defined as:</p> <ol style="list-style-type: none"> i. when linguistic output was encoded on her communication system ii. verbal speech approximations for “yes” in response to yes/no questions. <p>Feedback including vocalizations did not constitute a turn.</p> <p>Non verbal and verbal interactions for the purpose of clarifying messages were not considered a speaking turn but were recognised as within turn signals.</p>	<p>Empowering system users in peer training.</p>	<p>Buzolich & Lunger (1995).</p>

AAC Method	Description of Definition	Study	Researchers
Communication books with PIC signs (Graphic picture symbols)	Dialogues between parents and children. The children indicated (pointed) to picture symbols or used head movements e.g. to indicate 'no', smiled, or vocalized. All referred to as "turns".	Words and strategies: Conversations with young children who use aided language. (Chapter 4)	Von Tetzchner & Martinsen (1996).
Manual signs (Makaton signs based on British sign language)	Utterance length was calculated as the number of signs and points (to objects, people and locations) produced per communication turn.	The two-word stage in manual sign language development in signers with intellectual impairments.	Grove, Dockrell, & Wold (1996).
Manual signs and communication boards with graphic signs (PIC, PCS) and photographs.	AAC user's communication referred to as "utterances". Modes e.g. manual signs, body movements, vocalization or pointing to graphic conveyed by notation.	Allowing for developmental potential: A case study of intervention change.	Møller & Von Tetzchner (1996).

3.4.5 Proposed Model for the Segmentation of Interactions

A possible model for the segmentation of interactions involving a person who uses AAC with a speaking partner(s) is represented in Figure 3-1.

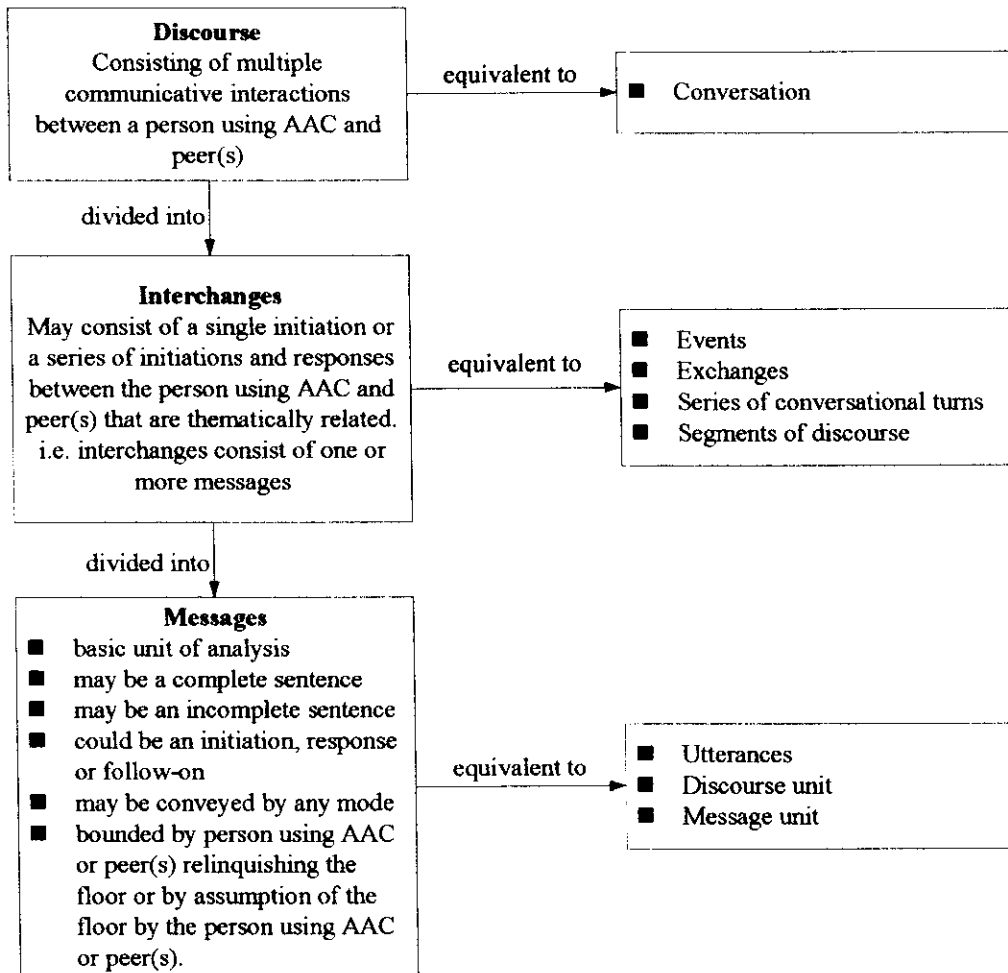


Figure 3.1 Schematic representation of division of discourse into segmented units.

In this model the term “interchange” is used to describe a coherent segment of interaction as adopted from the terminology of Stubbs (1983). Interchanges are further divided into “messages”, the smallest unit of analysis in the study. “Message” is therefore synchronous to the term “utterance” in spoken language studies where one or more messages constitute a communicative turn. In the proposed model one or more messages by one or more partners constitute an “interchange”. A message can be either an

initiation or a response or follow-on and an “interchange” a combination of these. An interchange is defined as a single initiation, or a series of initiations and responses between the AAC user and one or more peers that are thematically related and have discernible boundaries. Interchanges thus correspond to a single initiation or a series of turns referred to as a conversational interchange within the field of conversational analysis. A single initiation is included as it is regarded as an attempt to initiate an interchange.

Embedded in the above definition are initiations and responses that are defined as follows for the purpose of the proposed model.

- Initiations are an attempt using any mode to instigate an interactional event by either the person who uses AAC to a peer or a peer(s) to the person who uses AAC. Modes of interaction may include vocalizations, verbalizations, body movements, facial expressions, VOCAs, use of eye-gaze or computer generated initiations.
- Responses are endeavours of a peer or peers to react to an initiation by the person using AAC or any endeavor of the person using AAC to act in response to an initiation by a peer or peers.

Once transcriptions are segmented into these units each message can be further coded as required by the researcher to best meet the specific purposes of the research, for example the modes or communication functions employed by the person using AAC. Once the method of coding is established, coded data can be analysed further.

3.5 SUMMARY

This chapter began by described the difficulties involved in accurately describing interactions involving persons who use AAC. Peer referenced assessments and other possible strategies to portray the psychosocial background of the person who uses AAC were then discussed. The issues and selection of notational and transcription schemes for use in studies involving AAC were described. The difficulties of the segmentation of transcripts involving AAC interactions were reflected and the chapter ended with the description of a possible model of segmentation of discourse involving AAC.