1987

Mother tongue-father tongue: a case study of protolinguistic development in a bilingual context

Peter Bodycott

University of Wollongong

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Title of Thesis

MOTHER TONGUE - FATHER TONGUE

A case study of protolinguistic development in a bilingual context.

Name of Student

Peter Bodycott
Para nuestra hija linda.

For our beautiful daughter
ACKNOWLEDGEMENTS

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A very special thank you to my family, especially my mother and father, sister-in-law Pamela and cousin-in-law Maggie for their time, patience and understanding throughout the tedious transcription and member checking sessions.

Finally to my wife Sylvia, and daughter Zoe, my love and admiration for participating in and withstanding the rigors of thesis writing and for the wealth you both have provided me.
ABSTRACT

This study explores the protolinguistic development of one child in a bilingual social context, utilising a naturalistic research paradigm.

The subject Zoe's language development was observed from birth. The resulting protolinguistic data, non verbal and social contextual influences were recorded using journal/field notes, audiotape and videotaping procedures.

Protolinguistic expressions were coded using the International Phonetic Alphabet and classified according to linguistic function utilising M.A.K. Halliday's functional components hypothesis. Linguistic expressions reflected a systematic development of linguistic options within six protolinguistic functions. The development of the protolanguage resulted in lexical items from both languages. The first, mother tongue (Spanish) word being noted between 12-13 and one half months while the first father tongue (English) word occurred between 10 and one half months and 12 months. Lexical item development from both languages displayed relationships between the intonation, personal interest, real life experiences and parental demonstrations. Data collection techniques revealed difficulties associated with the use of audio and video tape recordings as opposed to field note/journal entries.
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CHAPTER 1

INTRODUCTION
Prologue

The clock on the wall shows 7.45 p.m. It is a warm March evening. The view from the labour ward serene and peaceful, contrasting the immediate scene within the confines of cubicle three.

Father: "It's a girl, you were wonderful honey, we got our Zoe."

Mother: (holding baby on her stomach) "que linda mi guagua."

Father: "Hello my Zoe, welcome to our world."

So began the linguistic immersion of Zoe. Her parents prior to the birth, deciding to raise her as a 'bilingual' - to provide a linguistic and physical environment which would support the learning of two languages from birth.
1.1 **Aim of the Study**

The aim of this study was to monitor, describe and analyse one child's protolinguistic development in a bilingual context.

1.2 **Principal Objectives of the Study**

The principal objectives of this study were:

* to examine the process of acquiring two languages from birth.
* to provide information concerning the development of Spanish and English lexical items from the protolanguage.
* to determine how parent roles affect the child's development of one language over the other.
* to contribute additional information to current knowledge concerning a functional approach to the coding of protolinguistic expressions.

1.3 **Rationale/Justification for Conducting the Study**

This study was based upon the linguistic data collected from observations made of the author's daughter Zoe in her first 16 and one half months of life.

The observation of children developing as language users is not new. It has fascinated and intrigued people throughout history. Dale (1972; in Fantini, 1985) cites a psycholinguistic experience, reported by 'Herodotus', around 600 B.C. It was however, not until the end of the 1800's, early 1900's, that more systematic study and interest in child language acquisition began to appear (Oksaar, 1983). Historical developments in child language acquisition studies have since resulted in many different approaches from which scholars, researchers and parents have viewed language
development.

Some have adopted cognitive approaches. Psychologists, notably Clara and William Stern (1914, 1928; cited in Fantini, 1985), Buhler (1930; cited in Oksaar, 1983), Piaget (1926) and Vygotsky (1968) all contributed their approaches and methods in considering the relationships and problems between cognitive and linguistic development.

Others focused upon biological approaches, notably Lenneberg (1967) who proposed and emphasised the importance of biological foundations to language development. Linguists initially concerned themselves with the writing of linguistic descriptions of the language process. They wrote about phonology, morphology and syntax (Fantini, 1985). Oksaar (1983) notes several early twentieth century linguists which include Grammount (1902), Gheorgov (1905, 1908) who studied and analysed morphological development, Gregoire (1937) who produced one of the first systematic phonological studies and later Chomsky (1963).

Language research developed in this somewhat fragmented manner until Bloom (1970) hinted at a change in direction, a new approach from which to view language acquisition studies. Hymes (in Blount, 1974) concluded that something was still missing, a new perspective which needed considering. Hymes used the term 'an ethnography of speaking' to describe the relationship which existed between the child's social environment and any linguistic description. A 'sociolinguistic' approach, the function of which served to bridge the gap between the knowledge of abstract rules and the social function of language.
This study, like other more recent monolingual studies (Halliday, 1975; Dore, 1975; Painter, 1984 and Oldenburg, 1986) seeks to utilise this 'sociolinguistic approach' to language acquisition. In addition this study focuses upon 'bilingual acquisition'. Bilingual and multilingual studies in early language acquisition is a relatively unexplored area in the field of linguistics (Huerta-Marcias; cited in Escobeo, 1983).

While there have been two notable 'bilingual' studies which have utilised a 'sociolinguistic approach' (Saunders, 1983 and Fantini, 1985) neither have afforded the detailed analysis of the child's protolinguistic development within a bilingual context from birth, that this study will provide. Both studies focused primarily upon developmental sociolinguistic aspects of the learning process. There is then, seen to be a need for a more detailed linguistic summary and analysis which will provide insights into how children acquire two languages from birth, or stated in sociolinguistic terms, "how children make sense of the bilingual linguistic milieu which surrounds them from birth".

1.4 **Locus of the Study**

1.4.1 **Conceptual**

The research paradigm from which this study draws is the 'naturalistic' as opposed to the 'rationalistic' research paradigm. There is a range of research paradigms from which one can choose. Irrespective of that which is chosen it comprises an axiomatic system, characterised by a set of assumptions about the phenomena into which it is designed to enquire
(Guba and Lincoln, 1982). The choice between research paradigms pertains to: the nature of reality, the inquirer/respondent relationship, the nature of truth statements, the attribution or explanation of action and the relationship of values to the inquiry (Guba and Lincoln, 1982). The choice of paradigm involves a consideration of both the underlying axioms and their complementary set of postures in relation to the nature of the phenomena under investigation (Guba and Lincoln, 1982).

The nature of this study's focus, determines the choice of research paradigm. If the objectives are to be met there must be seen to be a good 'fit' between the linguistic phenomena being studied and the research paradigm. With the axioms and postures pertaining to 'naturalistic' research in mind, it is believed that a naturalistic paradigm best suits the linguistic phenomena under study.

The philosophical stance of the researcher was also a determinant in the choice of paradigm and consequently dictated his way of going about the research (Guba and Lincoln, 1982). The relationship which existed between the author's philosophical stance, the study's focus and the subsequent choice of research paradigm is best illustrated by use of a conceptual locus decision making 'flow chart'. (See Figure 1). This study reflects then, a 'sociolinguistic' framework which has been described as a 'functional components hypothesis' (Butler, 1985; Halliday, 1975 and Painter, 1984).
1.4.1.1 A Sociolinguistic Framework

This study was located within a sociolinguistic framework. Halliday (1970; cited in Butler, 1985) claims that the grammar or 'meaning potential' of a language is organised along functional lines. Specifically he claims that:

"when we examine the meaning potential of the language itself, we find that the vast numbers of options embodied in it combine into a few relatively independent 'networks'; and these networks of options correspond to certain basic functions of language" (Butler, 1985 pp. 47).
At the core of Halliday's theory is a set of seven functions which are seen to be relevant to the linguistic needs of the very young child. The seven functions proposed are:

- Instrumental
- Regulatory
- Interactional
- Personal
- Heuristic
- Imaginative
- Informative

All functions are seen by Halliday as having equal status. No one function more basic than any other, nor more abstract.

"Halliday's emphasis on the equal importance of the non-ideational aspects of language function contrasts with the attitude prevalent among more traditional approaches, viz. the primacy of cognitive meanings. In Halliday's scheme, the construction of an utterance (except perhaps in the case of ritualistic utterances such as greetings) involves simultaneous selections of options from all the functional components" (Butler, 1985 pp. 48).

The term 'function' was used in three related but distinct senses:

(i) the non technical meaning which is interpreted as the overall uses to which language can be put;

(ii) a component of the grammar (ideational, interpersonal, textual) reflecting external function; and

(iii) as a structural element in a strand contributed by one of the functional components (Butler, 1985).

For the purposes of this paper only the first was addressed in any detail.
As a child develops she develops a powerful means of signalling meaning through her utterances (Halliday, 1975). In responding to the child's voice, the parents set up the initial collaborative learning experience. This social interaction of non-verbal and complex verbal communication combined with utterance, gives rise to a set of signals that result in the child's needs and wants being met (Curtis, 1986). Halliday (1985a) describes this communication as the 'protolanguage'.

1.4.1.2 The Concept of Protolanguage

The protolanguage serves the child within her community of informed family members. These people are informed in the sense that they can understand or 'read' the baby's linguistic expressions or signs. The child creates this symbolic system on her own; it does not at this stage contain either 'vocabulary' or 'grammar' but consists of a set of functional signs (Halliday, 1985a).

The child in collaboration with family members begins to engage with the signal system as she matures and moves into a more lexico-grammatical language - "a code consisting of words in structure" (Halliday, 1985a, p. 3). This expands the child's communication potential, broadening her knowledge and use of language.

"In the process of constructing meaning through language, every child must reinvent the language wheel" (Halliday, 1975, pp. 32). As she draws upon and transacts with the symbols for meaning (Curtis, 1986) in her culture the language she constructs reflects her own experience of the world.
The aim of this study was to examine protolinguistic development from birth utilising a 'functional' framework for classification and analysis. The study also necessitated a research paradigm which best suited the data and the questions which were to be answered - a naturalistic research paradigm.

1.4.2 Physical

The physical locus of this study was based upon communicative situations in or around the parents and grandparents' homes. The context from which communication takes place varied. Within these contexts there were a number of important differences, for example:

- parents' home; mother English/Spanish speaker, father English with minimal understanding of Spanish language.
- father's parents and sister's home; totally English - no Spanish understanding.
- mother's parents; English/Spanish speakers - mother's brothers and sisters speak Spanish to parents, grandparents speak mostly Spanish to family.

In order to maximise the trust worthiness and credibility of the data collection process and analysis, the study was organised so that a process of triangulation or cross referencing between contexts was possible. The linguistic data was collected at varying times and where possible in various places, performing different activities. This was seen to be necessary as general play sessions in the morning did not always provide the same communicative context as play sessions in the afternoon. Single situations
maintained a consistent configuration of activities, although there was to be a
great diversity in the kinds of interaction which occurred (Saville-Troike,
1982).

1.5 Conclusion

This study was a descriptive case study of how one child acquires,
develops and makes sense of the bilingual milieu which surrounds her.
Although the specifics of this study cannot be directly generalised to the
majority, what can be compared are the sociolinguistic features of this child's
language, to other monolinguistic or single language studies.

Two studies were selected for this purpose, Halliday (1975) and
Painter (1984), both of which utilise similar data collection techniques and
framework for analysis.

This study was not controlled, but grew from the data collected through
observation and participation of the author in the daily life of the child. The
analysis of this data served as the basis for the study.

In the following chapter a review of related research will be
undertaken. This is followed by an outline of data collection analysis and
justification techniques. An outline and analysis of Zoe's protolanguage
appears in Chapter 4 and finally a summary of findings and conclusions
which includes implications of this study and recommendations for further
research.
CHAPTER 2

REVIEW OF RELATED LITERATURE
2.1 Introduction

"For centuries parents, scholars and teachers have been fascinated and amazed by the phenomenon of language acquisition in children. How are we to account for the fact that virtually every child, without special training, exposed to the surface structures of language in many interactional contexts, builds for himself - in a short period of time and at an early age in his cognitive development - a deep-level abstract, and highly complex system of linguistic structure and use. And that is only the beginning. In addition to acquiring the structure of the language of his community, the child acquires the complex underlying rule system governing its use: how and when to say what to whom." (Lindfors, 1987, pp. 90).

In reviewing literature which pertains to this study, the focus was upon:
- child language acquisition
- bilingual acquisition, and
- naturalistic research paradigms (Chapter 3)

2.2 Child Language Acquisition

Throughout the first half of this century there existed a view that language learning occurred as a result of the environment shaping a child born with a given I.Q. (Lindfors, 1987).

Behavioural psychologists (Skinner, 1957; cited in Baghban, 1984) were mainly concerned with the prediction and control of functional units of behaviour. The position held was that language is merely behaviour which is reinforced and language in turn reinforces learning through its effects on the learner. Lindfors (1987) provides a summary of findings which discounts
the behaviourists account of language acquisition.

The behaviourists' view is unable to account for
1. *The species uniformity of language acquisition.*
2. *The species specificity of language acquisition.*
3. *The independence of language development from reinforcement for form.*
4. *Children's inferring deep-level structure from an exposure to surface structure.*
5. *The relatively short period of time, and*
6. *The early stage in children's lives, during which they acquire so much of a complex linguistic system.*

(Lindfors, 1987, pp. 104).

Developmental research since the 1960's revealed the differing theories and highlighted the shifts in emphasis which have confronted linguists and researchers.

In what may be seen as a reaction to the strong behaviourists views of the time, a noted critic of them Noam Chomsky (1965) focused upon the child's early grammar (Lindfors, 1987). Chomsky maintained that children were born with the foundations of linguistic structure. This view was supported by Lenneberg (1967) who drew attention to the ways in which language acquisition parallels many genetically acquired skills. Lenneberg at no time claimed that language acquisition was an entirely inherited phenomenon, rather exposure to language in the environment was a necessary condition for language acquisition (Lindfors, 1987).

Other researchers of this period who agreed with Chomsky include Braine (1963), Brown and Bellugi (1964), McNeill (1966, 1970; cited in Oksaar, 1983) and Slobin (1967; cited in Saville-Troike, 1982). Braine,
Brown and Bellugi produced investigations which provided grammatical language descriptions in terms of two word classes called 'pivot' and 'open' by Braine (1963), and 'modifier', 'noun' by Brown and Bellugi (1964). McNeill (1970) suggested that before language acquisition begins the child possesses a knowledge of grammatical categories.

Slobin (1966) examined language universals and through collecting data from direct observations of children learning language, in natural settings, was led to contrast what was believed to be a special processing ability, used by children to make sense of language, with Chomsky's innate 'content approach'. The conclusions infer an 'innate' cognitive competence, rather than the content of such competence' (Slobin, 1966; cited in Lindfors, 1987).

It was in the late 1960's, early 1970's and notably the studies by Bloom (1970) and Schlesinger (1971; cited in Painter, 1984) that important methodological issues were raised. These issues were seen to need consideration in any interpretation of early syntactic forms.

Bloom in her study, unlike earlier studies on grammar, was able to justify her analytic categories retrospectively by observing that as the child's utterances increased in length and complexity, the postulated underlying relations were realised in surface grammatical forms (Coulthard, 1985).

With the noted exceptions of Braine (1963), Brown & Bellugi (1964), McNeill (1966; cited in Oksaar, 1983), Menyuk (1964) and Bowerman (1973) language acquisition studies of this period were generally rooted in observed linguistic behaviour. Following on from the work of Bloom (1970)

Both Dore and Halliday were interested in classifying utterances functionally. Bates et al. (1979; cited in Ochs and Schiefflin, 1979) reports a study designed to discover how a child comes to produce utterances. They follow the development of communication through three stages proposed by Searle (1969; cited in Coulthard, 1985).

(i) a perlocutionary stage,
(ii) an illocutionary stage, and
(iii) a locutionary stage.

The importance of these stages being that they emphasised a continuum of communicative utterances which from the beginning the child uses vocal signals to 'do things' (Coulthard, 1985).

The shift toward 'communicative function' in language research resulted in language being studied in earlier stages of development.

2.2.1 Research Based on Communicative Language Function

2.2.1.1 Dore's Research

Dore (1973; cited in Coulthard, 1985) provided an exploration of the 'ontogenesis of speech acts'. Following on from the model outlined in Searle (1969; cited in Coulthard, 1985), Dore suggests that one word utterances are characteristic of what was termed 'primitive speech acts'.
These nine primitive speech acts being realisations of a child's one word utterances. (Refer to Table 1, page 18).

Dore emphasises the distinction between the force of an utterance and its grammatic form. The categories he proposes are seen as not merely 'speaking categories', but rather categories from which adults may be able to interpret what the child is saying (Coulthard, 1985).

For example, even when a child is limited to one word utterances, questioning can be identified by the rising intonation of the voice, as well as by nonverbal aspects of the situation itself; looking up expectantly, turning away when a response is given (Dore, 1975).

A criticism of Dore's work made by Wells (1978; cited in Painter, 1984) is that Dore presents these primitive speech acts as an 'open ended' list without any internal structure. That is the list is offered without any 'psychological' or 'sociological developmental framework' to explain its members (Painter, 1984). It should be noted, however, that Dore does carefully note the linguistic and contextual factors characteristic of each speech act.

Halliday (1975) reports on a study of the language development of one child, Nigel his son, from the age of nine months. His work is largely a development on the ideas of J.R. Firth (1890-1960). Firth was concerned with the practical as well as theoretical aspects of phonetics. He emphasised the description of languages for practical purposes and was insistent that linguistics be seen as an autonomous discipline, having its own terminology and methodology apart from other fields of academic inquiry.
TABLE 1

Dore's Primitive Speech Acts

<table>
<thead>
<tr>
<th>Primitive speech act</th>
<th>Description of example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labelling</td>
<td>M touches a doll's eyes, utters /aiz/, then touches its nose. utters /nouz/; she does not address her mother and her mother does not respond.</td>
</tr>
<tr>
<td>Repeating</td>
<td>M, while playing with a puzzle, overhears her mother's utterance of <em>doctor</em> (in a conversation with the teacher) and M utters <em>data</em>; mother responds <em>Yes, that's right honey, doctor</em>. then continues her conversation: M resumes her play with the puzzle.</td>
</tr>
<tr>
<td>Answering</td>
<td>Mother points to picture of a dog and asks J <em>What's this?</em>; J responds <em>baowawi</em>.</td>
</tr>
<tr>
<td>Requesting (action)</td>
<td>J tries to push a peg through a hole and when he cannot succeed he looks up at his mother, keeping his finger on the peg, and utters /laplap/ with constant contours and minimal pause between syllables; his mother then helps him push the peg, saying <em>Okay</em>.</td>
</tr>
<tr>
<td>Requesting (answer)</td>
<td>M picks up a book, looks at her mother and utters /buk ↑/ (where arrow indicates a rising terminal contour); mother responds <em>Right, it's a book</em>.</td>
</tr>
<tr>
<td>Calling</td>
<td>J, whose mother is across the room, shouts /mama/ loudly (where * indicates an abrupt rising-falling contour); his mother turns to him and says <em>I'm getting a cup of coffee. I'll be right there</em>.</td>
</tr>
<tr>
<td>Greeting</td>
<td>J utters /hat/ when teacher enters room; teacher responds <em>Hello</em>.</td>
</tr>
<tr>
<td>Protesting</td>
<td>J, when his mother attempts to put his shoe, utters an extended scream of varying contours, while resisting her; M, in the same circumstance, utters <em>No</em>.</td>
</tr>
<tr>
<td>Practising</td>
<td>M utters <em>daddy</em> when he is not present; mother often does not respond.</td>
</tr>
</tbody>
</table>

(Dore 1975, p. 31)
(Butler, 1985). One of the main influences upon Firth was Malinowski (1923,
1935; cited in Butler, 1985). It was Malinowski who convinced Firth that the
language of a community could not be fully understood in isolation from the
social contexts of use and that the meaning of an utterance lay essentially in
the use to which it is put (Butler, 1985).

In the period 1964-1971 Halliday developed Firth's interpretation of the
'category system' into networks. These networks were seen to represent
deep paradigmatic relations of language which were semantically relevant
(Butler, 1985). Throughout the 1970's Halliday's work continued to focus
upon a 'structural' or 'functional' description of language in which semantic
and social phenomena were to play an important role.

2.2.1.2 Halliday's Research

Halliday (1975) outlines three phases in his son, Nigel's linguistic
development. Phase One lasted from approximately nine to sixteen months -
the protolanguage phase - it is this phase which directly relates to this study.
Phase Two - from sixteen months up until two years of age - the transition
phase, and Phase Three - from two years on.

A feature of Halliday (1975) and Painter's (1984) work was that they
began their studies at a time when there appeared to be a correlation
between the children's utterances and some broad meaning which could be
interpreted by an adult. In Phase One the set of functions represent a
framework which language serves for the child.
"In respect of each function there is a 'content' which may be described in terms of a small set of systemic options, and an expression in sound which is quite idiosyncratic to the child" (Painter, 1984 pp. 31).

Halliday (1975) describes these functions (refer to Section 1.4.1.1 page 7) as 'functions in which a child first learns to mean' (p. 37). The set of functions will be more fully described prior to the 'protolinguistic description' - Chapter 4.

Halliday's hypothesis was that these functions would appear approximately in the order listed, and they would be separate from each other i.e., one utterance, one function. As mastery of each function develops, and with the introduction of adult sounding language (lexical items) the child's language would enter Phase Two - a transition stage between the protolanguage of the child (Phase One) and full blown linguistic competence (Phase Three).

During Phase Two, there is no longer a one to one relationship between expression and function. There is also a noted increase in the number of lexical items learned by the child. In 'Nigel's case, (Halliday's son) he developed two types of structure - a specific expression plus gesture and a general expression plus specific expression from the same function' (Butler, 1985).

What arises from these combinations and generalisations of Phase One functions are two more general functions which Halliday (1975) calls 'pragmatic' and 'mathetic'. The 'pragmatic' relates to contexts in which objects/actions are being asked for - the 'mathetic' to aspects of the child
learning about her environment. Halliday (1975) believes these combinations and generalisations to be important steps on the way to a multifunctional adult linguistic system.

Phase Three, the 'pragmatic' (observer) and the 'mathetic' (intruder) functions become what Halliday describes as the 'ideational' and 'interpersonal' functions of the adult system (Butler, 1985).

Critics of Halliday's approach to language acquisition include (Dore 1977; Berry, 1982 and Butler, 1985; cited in Butler, 1985). Butler and Dore question the functional components hypothesis "though attractive, it cannot be regarded as very firmly supported" (Butler, 1985 pp. 90). They observe that Halliday is less than successful, if not puzzling in his claim that 'the internal organisation of the grammatical system is also functional in character' (Halliday, 1975 pp. 16). Dore claims that Halliday provides little evidence for the 'relevant' models of protolinguistic function. Dore (1977) also criticises Halliday for not making a clear explanation as to why the functional system changes and why the grammar has the form it does. Finally, Butler (1985) questions the 'sociolinguistic' model which forms the basis of Halliday's interpretation of language acquisition.

Not withstanding these criticisms of Halliday's theory, this study utilised his system of classifying protolinguistic utterances as presented in Halliday (1975) and Painter (1984). Given that there are limitations with any theory or methodology utilised, it is seen as appropriate to replicate a study, appreciating the limitations in order to criticise, consolidate or advance theoretical understanding.
When one attempts to synthesise what the previous research has demonstrated, the following composite picture of language acquisition emerges. The child is seen to gradually figure out how conversation works. She uses this 'developing knowledge' to guide her own communicative behaviour (Lindfors, 1987). The child's language structure (form) and the language use (function) are distinctions which we as adults impose in order to try and understand the languaging process. "Forms and functions are all of a piece, quite an inseparable wholeness for the child" as she interacts with others (Lindfors, 1987 pp. 345). The child is oriented through non verbal gestures and vocal sounds, in her first year, towards purposeful interaction.

It is through this everyday interaction, in which the child is involved, that essential meanings of the culture are transmitted. It is then conceivable that the functions of language determine the initial development of language in all cultures (Halliday, 1975). The functions approach provides us with a vehicle then, for understanding the development of both languages, specific to this study.

2.3 Bilingual Acquisition

2.3.1 A Definition of Bilingualism

The primary focus, as stated of this paper is upon 'bilingual acquisition', but what is the definition of 'bilingualism'? Haugen (1956; cited in Saunders, 1983) refers to 'infant', 'child', 'adolescent' and 'adult' bilingualism. The extent to which they are bilingual being the age at which two languages are acquired. This does, however, not imply an equal
mastery of both languages (Saunders, 1983).

Baetens Beardsmore (1982) in "A summary of definitions and typologies in bilingualism: basic principles", makes a distinction between 'infant bilingualism', (the results of a child being exposed to two languages from birth) and 'childhood' or 'consecutive' bilingualism. Beardsmore concludes that a continuum of bilingualism exists. This continuum ranges from a 'minimalist' standpoint, characterised by Haugen's (1953) statement: "bilingualism is understood to begin at the point where the speaker of one language can produce complete meaningful utterances in the other language" (Baetens Beardsmore, 1982 pp. 6): to a 'maximalist' viewpoint as put forward by Halliday, McKintosh, Strevens (1970; cited in Beardsmore, 1982). These authors use the term 'ambilingualism' to describe an individual with perfect equal native mastery of two or more languages, and go on to conclude that a truly 'ambilingual' person is extremely rare.

It may be said then that the concept of 'bilingualism' is seen to be a relative one. As the individual acquires the languages and develops their use, the degree of proficiency, skill and ability in both languages will vary.

Bilingualism then, as used in this study, refers to 'infant bilingualism' as defined by Haugen (1956). The linguistic analysis utilised in this study may well assist in the clarification of this definition.

2.3.2 Related Studies - Bilingual Acquisition

Slobin (1972) in an updated publication of Leopold's Bibliography of Child Language revealed that of the 50 studies reviewed only three stood
out as actual longitudinal case studies in the general area of bilingualism -
the studies were Ronjat (1913), Pavlovitch (1920) and Leopold (1939-1949).

Ronjat (1913; cited in Slobin, 1972) reported on the development of
French and German in his own son, 'Louis'. He found the language of his
son in the beginning to be 'unilingual' and that 'dual language' or
'bilingualism' had no harmful affects on the development of either language
(Garcia, 1983). The method utilised by Ronjat to immerse the child in the
languages, was basically the 'one person - one language' principle. That is
one parent consistently spoke French while the other spoke German
(Saunders, 1983).

Pavlovitch (1920; cited in Fantini, 1985) following a similar method,
recorded the development of French and Serbian in his son, 'Douchan'.

One of the first truly systematic studies of bilingual acquisition was
conducted by Leopold (1939-1949; cited in Fantini, 1985). He studied the
'simultaneous' acquisition of English and German in his daughter
'Hildegard'. Exposed to both languages from birth, her early language forms
were characterised by the 'free mixing' of both languages (Garcia, 1983).
However, Leopold did note that up until the age of two, her German
remained less developed than her English. Later development indicated
English and German grammatic forms developing independently (Fantini,
1985).

In the 1970's an increase in linguistic studies specifically relating to
bilingualism emerged. Of these, several relate to the present study in that
they address specific issues relevant to Spanish-English bilingual
development and acquisition. Carrow's (1971) report on the receptive domain of young bilingual Mexican-American children, aged 3 years 6 months to 6 years 9 months; a study of speech development in two 3 year old Spanish-English bilingual children by Padilla and Liebman (1975); a report by Bergman (1976; cited in Fantini, 1985) of her daughter's Spanish-English acquisition over three years; Keller's (1976) investigation of active and passive voice among 70 bilingual Spanish-English children; Cornejo (1973; cited in Fantini, 1985) who studied the language development of bilingual Mexican-American children; and Huerta (1977) who studied the simultaneous acquisition of bilingualism and the code switching which occurs between languages.

Whilst all of these studies relate to the present, they differ in two areas:

(i) many of the studies deal specifically with bilingual development in older preschool children, that is they focus upon children from 18 months to five years, and

(ii) that very few discuss bilingual acquisition and development from a sociolinguistic perspective, that is the exploration of the relationships which exist between the child's speech and the child's environment (Fantini, 1985).

Studies which discuss bilingual acquisition from a 'sociolinguistic' perspective are listed by Redlinger (1979; cited in Fantini, 1985). They include the works of Chen Yu Kuo (1974), Fantini (1976), Valdes Fallis (1976), Blount (1977), Schmidt-Mackey (1979) and Redlinger (1976).

More recent studies, Saunders (1983) and Fantini (1985) have utilised
this sociolinguistic perspective, however, neither focus on nor include a
detailed linguistic analysis of the social functions of the child's speech from
birth, which the present work purports to do.

2.3.3 A Bilingual Social Context: The Method Employed

The method employed in this study to create the linguistic immersion in
the social context of the home was similar to that subscribed to in research
by Ronjat (1913, Pavlovitch, 1920; cited in Slobin, 1972), Leopold (1939-49;
cited in Fantini, 1985), Imedadze (1967; cited in Huerta-Macias, 1983),
Fantini (1985) and Saunders (1983), that is the 'one language - one person'
principle.

Other research studies which have contributed to our knowledge of
bilingual acquisition of speech include Swaine and Wesche (1975; cited in
Herta Macias, 1983), Swaine (1972), Bergman (1976; cited in Keller et al.,
1976), Padilla and Lindholm (1976) and, Padilla and Liebman (1975). It can
be inferred from these studies that whilst not directly stating the method of
bilingualism employed, the same 'one language - one person' principle was
applied (Huerta-Marcias, 1983).

Researchers do not all agree that this method is the best or most
suitable. Zierer (1977; cited in Saunders, 1983) believed that:

1. *Simultaneous acquisition of Spanish and German would*
   *"produce perturbations in the child's cognitive and affective*
   *control" and "would undoubtedly constitute very*
   *considerable mental exertion for the child".*
2. "Considering the powerful unifying force that a language exercises of its speakers, the integration of the family would have been affected if the child had spoken to his mother in one language and to his father in another."

(Saunders, 1983 pp. 33).

These assumptions were, however, not found to be supported in the research (Saunders, 1983). Heurta-Macias (1983) concludes that studies of 'simultaneous' bilingual acquisition are required where no effort is made to separate the languages.

In the present study, however, this was an impossibility as the father had little receptive knowledge of the Spanish language. Therefore, the linguistic milieu of the child in the home contained Spanish language, contributed by the mother and English from the father.
3.1 Introduction

The source of the data collected in this case study was the author's daughter Zoe. The decision to work within a naturalistic research paradigm, utilising a participant observation case study methodology was a consequence of the setting, the objectives of the study and the theoretical beliefs of the author. The data collection methods included field notes in journal form, audio and video tape recordings.

3.2 Rationale for Using a Case Study Methodology

Research on child language acquisition and development has used the case study as its primary method of recording data (Baghban, 1984).


Bissex (1980) in a 5 year case study on her son, introduces the study by stating that her methodology was an attempt to understand another person through 'enlightened subjectivity'.

Baghban (1984) states that while a parent is inherently 'subjective', a detailed case study of a child learning language 'would be almost impossible for a non parent researcher (p. 8) although the observer must make a distinction between observations made and any subjectivity stemming from the relationship with the child.
The active involvement of the researcher working within a naturalistic paradigm, necessitates that data credibility measures be implemented thus minimising personal subjectivity and optimising reliability in the researching process (Willems and Raush, 1968). An outline of the credibility procedures utilised in this study can be found in Section 3.4, page 34.

The alternative approach to 'naturalistic research' utilising a case study format would have been to conduct the research under a 'rationalistic paradigm'. This would involve observing children performing experimental linguistic tasks in controlled settings in order to explore, test and validate specific hypotheses.

Rodgon (1976) and Benedict (1976) (cited in Painter, 1984) are examples of 'experimental' or 'rationalistic' linguistic studies.

Rodgon recorded great difficulty in persuading her 16-21 month olds to cooperate in the performance of the tests. Benedict in a study of the lexical comprehension of a group of 10-16 month old children concluded that very young children are 'switched on' to language for only brief periods; after a short period the children apparently ceased attending to anything that was said.

Newson (1978; cited in Painter, 1984) argues: "that the traditional objective of scientific paradigms are simply inappropriate for understanding or even describing 'the reality of intersubjectivity shared experience', and argues strongly the necessity of looking at the communicative process from the point of view of a participant-observer." (Painter, 1984 pp. 38).
Rothney (1968; cited in Baghban, 1984) states that the case study is a procedure under which all other methods are subsumed. Likewise, Barr (1930; cited in Baghban, 1984) concludes that the case study is essentially a combination of causal, historical and experimental methods of research and has therefore more continuity with daily life.

The case study also is particularly well suited to the collection and analysis of complex phenomena under real life conditions (Good, 1941). Therefore, as the purpose of this paper is to monitor, describe and analyse linguistic development within the social context of the home, a naturalistic research paradigm, incorporating a case study format is seen to be appropriate.

3.3 **Participant Observation (P.O.)**

An important element in any case study is the method of observation. The method employed in this study, as stated, is 'participant observation'.

Dobbert (1982) distinguishes 'participant observation' (P.O.) from ordinary or straight participation by a researcher, in a group, in four ways. Firstly, the participant observer systematically organises information about the situation around a framework taken from social science theory and methodology. Secondly, a participant observer records in detail many aspects of the situation. Thirdly, the participant observer periodically abstracts himself from the situation and reviews the recorded information for completeness. Fourthly, in the interests of intersubjectivity, a participant observer constantly checks observations for evidence of personal bias or
prejudice (Dobbert, 1982 pp. 102-105).

The inherent advantages of the P.O. case study approach have been summarised by Bailey (1978; cited in Cohen, 1980).

1. **Observation studies are superior to experiments and surveys when data are being collected on non-verbal behaviour.**

2. **In the observation study, the investigator is able to discern ongoing behaviour as it occurs and is able to make appropriate notes about its salient features.**

3. **Because case study observations take place over an extended period of time, the researcher can develop a more intimate and informal relationship with those he is observing, generally in more natural environments than those in which experiments and surveys are conducted.**

4. **Case study observations are less reactive than other types of data-gathering methods. For example, in laboratory-based experiments and in surveys that depend upon verbal responses to structured questions, bias can be introduced in the very data that the researcher is attempting to study.**


The disadvantages of P.O. complement the advantages. Researchers may get too close to the data to see what the patterns are and secondly the researcher is at the mercy of their data. That is, data is usually obtained slowly and over a long period of time which tempts the researcher to push the situation to obtain the data (Dobbert, 1982). Worse still, the participant observer's philosophical position or subjectivity may pollute the data and results yielded.

Credibility measures developed by people working within a naturalistic field of inquiry such as Guba and Lincoln (1982, 1985) and Bryce-Heath
(1983), have laid a firm and credible theoretical foundation of evaluation which rests upon credibility, transferability, dependability and confirmability of the research findings (Curtis, 1986).

An outline of the data collection and analysis process undertaken in this study are illustrated in Figure 2. An essential component of this process are the techniques utilised in maintaining 'credibility' (Guba and Lincoln, 1981) or as Cohen (1980) suggests, 'internal and external validity' of the study and findings.

**Figure 2**
Outline of Triangulation: Cross Referencing Procedures
3.4 **Maintaining Credibility**

Following the collection, transcription and initial classification of protolinguistic utterances (detailed in Chapter 4) at 6 weekly intervals, all would be presented for 'member checks' (Guba and Lincoln, 1985) by three other individuals.

The 'member check team' all had what was considered to be an intimate knowledge of the study's primary focus, Zoe. Two of the participants, by being slightly removed from the immediate data collection environment, were able to provide an 'experienced neutrality' towards the data. That is, each having raised several children, to be English speaking (English grandmother) and English/Spanish speakers (Eng./Span. aunt) they could provide an outsiders opinion looking in at what the author could see from the inside looking out.

The third and vital participant of the 'member check team' was the mother, who could furnish information as an involved participant in the environment from which the data was collected. No other participant had the intimate knowledge of the subject's language; notably in the first twelve months.

'Member check' meetings were held following the analysis and classification of the data at various stages throughout the study. The purpose of these 'member check' meetings was to check the author's transcription and interpretations of expressions. Member check sessions allowed the author an opportunity to revise and justify his interpretations. The Spanish participants were seen to be necessary in order to isolate
expressions which they interpreted to be Spanish sounding. Where disagreement over English/Spanish interpretations existed, a majority rule (consensus vote) determined the structure of the expression.

The member checking process is best described as a triangulation process, where participants discuss, recall, vocalise protolinguistic utterances in order to agree upon the correctness of the author's record. It is summarised in the following diagram.

```
Mother (English/Spanish)

Author's description and interpretation of linguistic expression

Grandmother (English)

Aunt (Eng./Span.)
```

Figure 3
Credibility: A Triangulated View

A 'peer debriefing' session (Guba and Lincoln, 1985) was also undertaken which required the author to present for critical appraisal to knowledgeable but non-involved persons, the research data and analytic procedures. The purpose of this 'debriefing' session was to ensure that the author maintained his honesty, by probing his biases, exploring the meanings he developed and the basis for his interpretations.
The added advantages of this session were that it provided the opportunity for the author to defend the direction the study was taking, to justify and highlight the strengths and concerns of the methodological design, to share and gain feedback on the study which at times could best be described as overwhelming. Peer debriefing also forced the author to demonstrate an explicit 'audit trail' (Guba and Lincoln, 1981) by which peers could trace back through the data to check the trustworthiness of his data analysis.

3.5 Methods of Data Collection

Butler and Dore (1977; cited in Butler, 1985) question the methodology utilised by Halliday (1975) in his original study.

"...it is a tribute to Halliday's virtuosity as a linguist that he managed to record so much interesting data simply by the use of pencil and paper..."

(Dore, 1977; cited in Butler, 1985 pp. 91).

It is suggested that to clear up any suggestion of subjectivity and question of transcriber error, a video recording would be extremely useful (Butler, 1985). Painter (1985) in "Into the Mother Tongue: A Case Study in Early Language Development", utilises fieldnotes and audiotapes as her prescribed methods of data collection. On the basis of criticisms levelled at Halliday and the findings of Painter, this study focused upon three select methods of data collection: field notes, audiotapes, and videotapes.
The selected methods of data collection were directed at obtaining an accurate picture of Zoe's linguistic development. As outlined, they provide a 'triangulated' approach to data collection in a variety of communicative contexts.

![Data Collection Diagram]

**Figure 4**
Data Collection: Across Communicative Contexts

### 3.5.1 Fieldnotes/Journal

Initially the aim was to record, on a regular basis, daily features of Zoe's linguistic development. This not only proved impractical but time consuming. In the early stages of Zoe's protolanguage it was, however, useful to note phonemically her utterances by hand as so much of her initial language used was in the car, or while out at dinner. The records show her expressions, to which were added later the environmental features, purposes, participants, objects involved and interpretative comments.
As this was not the only data collection method being utilised the value of fieldnotes were initially underrated. However, as the study progressed the importance of this journal became apparent. Within the notes problems or hypotheses concerning her language development were added in a comments column on the right hand side of the page. (Refer to Appendix A for an example of field notes/journal).

The fieldnote/journal was useful in that other participants could add linguistic notes whilst the author was at work or out. The record shows many of what 'we' felt were Zoe's understandings about language. Notably, understandings in both languages. The journal was kept as a record of linguistic development which occurred between video and or audio taping sessions. It was sometimes used twice a day and other times two or three times a week. An advantage of being a participant observer proved to be the invaluable late night, early morning diaper changing linguistic exchanges, the author becoming quite adept at writing in the journal in half and at times no light.

All the linguistic samples of data collected in the fieldnotes were supplemented and cross checked with audio and videotape recorded data.

3.5.2 Audiotape Recordings

Following the model set by Painter (1984), it was decided to record on audiotape, two 30-45 minute sessions every six weeks.

The tape recording unit was a Toshiba stereo 'Walky', which provided excellent microphone pick up.
Following the recordings it was endeavoured to transcribe as soon as possible following the taping. Noting from the field note journal, or memory, any contextual details concerning the social environment, participant's hand movements or facial gestures which specifically related to the linguistic expression. Where the tape was used by other people, for example Zoe's English speaking grandmother, the grandmother would sit with the author and assist in the transcription process. The benefits of the audiotape were seen to be that it could be utilised in a variety of contexts within communicative situations. For example, in the car or while out riding on a bike.

3.5.3 **Videotape Recording**

Videotaping was to be the major data collection method. The taping began and continued at 4-6 week intervals from birth. Each taping session lasting an average 50 minutes.

The video camera used initially was a V.H.S. J.V.C. Porta Pak unit, mounted when appropriate on a tripod. As Zoe became more mobile and more adept at pushing buttons, the J.V.C. unit was replaced by a National M.3.

The videotape transcripts were done over a period of time and were closely compared with audiotapes. On many occasions, mainly meal and playing time, the video would be mounted on a tripod and left to run on a wide angle. At other times the parents alternated as camera operators.
3.6 **Constraints of the Methodology**

In the developmental studies of Scollan (1976; cited in Painter, 1984) and Braunwald and Brislin (1979; cited in Ochs and Schiefflin, 1979), the child subjects became aware that their speech was under study without being directly told so. Painter states:

"Hal never became aware that I was interested in his language, never connected my jottings with pen and paper with himself, and never realised the function of the cassette recorder."

(Painter, 1984 pp. 42)

Whether Zoe was cognitively aware that her language was being studied was difficult to discern. She was aware, however, that her mother and father were playing with that 'special toy' of hers (that reappeared now and then) and she would stop what she was doing on some occasions to play with the video unit.

Zoe was in these 'play' situations from around 1 1/2 months, able to turn the video off. From a psychological perspective she had what appeared to be a 'switch phobia'. If it was off it had to be on and vice-versa. She also had what her grandparents dubbed an 'extra sense' when it came to audiotaping, seeming to produce fewer linguistic expressions when it was turned on.

The notebook and pens were also a fascination to her, which has continued to date. She would have to have the pen or pencil which was being used; she'd suck them, chew them, and use them (preferably in her favourite field note/journal book). These pages of notes and transcripts Zoe found suitable for screwing up, ripping and eating. Valuable data may well
have been lost in these ways.

Linguistic interactions with Zoe were never forced or consciously set up to test linguistic performance. As Zoe is a first child, both parents were involved in providing instinctively what they thought to be appropriate language demonstrations. Likewise if during a recording session the role of researcher began to interfere with the situational context, the taping and research role was abandoned. This again would lead to potentially important data being lost. It was, however, seen as important for the study, that this be done to alleviate any affect on the data under observation.

It should also be noted that whilst every attempt was made to record at regular intervals, this was not always possible, due mainly to the author's changing work hours and video camera availability. Nevertheless, there was a huge amount of incredibly rich data collected and these deviations from the intended plans did not affect the quality significantly.

3.7 Data Analysis

The data was analysed at 4-6 weekly intervals. This maintained a comparability with Painter (1984) and Halliday (1975). It provided enough time for significant changes to occur and new developments within the language. At the end of each data collection stage, a preliminary analysis was undertaken. This was deemed necessary whilst the intuitive knowledge of the specific stage remained fresh in the author's mind.

The transcribed data was 'member checked' as described in Section 3.4, page 34. Formal analysis of the data and final 'member checks' began
following the 16 and a half month recording period.

Protolinguistic utterances were coded in accordance with the International Phonetic Alphabet (I.P.A.). A table of which can be found in Appendix B. An explanation of the pronunciation rules which were applied in this coding is included in Appendix C.

A technique which assisted in the coding of protolinguistic expressions involved the author and other participants (member check team) in the 'fastidious reproduction' of the expression. That is, in order to code (I.P.A.) accurately, each person would fastidiously reproduce the expression, matching the intonation and sound as accurately as possible. Repeating the sound over and over, it would be matched against the original (tape, video) and then analysed and coded from this adult reproduction.

At each stage the transcriptions were prefixed by the child's age in months and days - 16(8) = 16 months 8 days. Each transcript was then divided into 'communicative events' and 'communicative acts' (Hymes, 1972; cited in Saville-Troike, 1982). Major participants names were, following initial use, abbreviated: Zoe 'Z', Mother 'M', Father 'F'.

A 'communicative event' (C.E.) was defined by a unified set of components beginning with the same general purpose of communication; the same topic involving the same participants. A 'communicative event' terminated whenever there was a change in major participants, role relationships or setting. If there was no change, a boundary between 'communicative events' was often marked by a period of silence or change in body position (Saville-Troike, 1982). 'Communicative events' were colour
coded on the original transcript and this assisted greatly in the interpretation of specific communicative acts. See Appendix D for an example of transcript.

'Communicative acts' (C.A.) relate specifically to the conventional speech act and/or its single interactional function (Saville-Troike, 1982). The interactional function being seen to be transmitted verbally or non verbally through gesture, or both.

Within the context of a transcript each C.A. was numbered:

- 003: (F) Zoe what have you got there?
- 004: (Z) Wawa.

- and analysed for communicative function.

As the author was following a synchronic functions approach, specific aspects of linguistic development (diachrony) at six weekly intervals were noted and discussed as they arose (Painter, 1984). The networking notation followed a traditional systemic formalism as outlined in Halliday (1976) and, Halliday and Martin (1981).

The choice of linguistic expression for inclusion as a feature of the protolanguage followed three general 'inclusion rules' (Guba and Lincoln, 1985).

Protolinguistic expressions were included if:

- they were reproduced in different situations or communicative events.
- they were repeated in similar communicative events.
- their meaning could be interpreted in terms of the social context.

Finally, before discussing the data, linguistic expressions classified included the significant intonation choices as recorded from the data. The
method of classifying intonation choice followed the set of categories suggested by Halliday (1967; cited in Coulthard, 1985) and presented in Table 2.

**TABLE 2**

**Significant Intonation Choices**

<table>
<thead>
<tr>
<th>Tone</th>
<th>Symbol</th>
<th>Tonic Movement</th>
<th>Terminal Pitch Tendency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>falling</td>
<td>low</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>rising</td>
<td>high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>falling-rising</td>
<td>high</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>rising</td>
<td>mid</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>(rising)-falling-rising</td>
<td>mid</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>(falling)-rising-falling</td>
<td>low</td>
<td></td>
</tr>
</tbody>
</table>

(Coulthard, 1985 pp. 99)

The intonation of specific speech acts provided another window through which to view the bilingual language acquisition process. Through the data collection procedures and the 'member checks' utilised it is anticipated that the view of Zoe's language received was 'credible' and accurate. The Figure which follows provides an overview of the data collection and analysis procedures. It should be noted that data collection and analysis procedures were completed every 4-6 weeks with a final formal analysis of all stages following the 16 1/2 months recording stage.
Figure 5
A Flow Chart of Data Collection and Analysis Procedures
A summary of protolinguistic expressions follows which includes notes on Zoe's linguistic development at 6 weekly intervals.
CHAPTER 4

RESULTS
4.1 Introduction

Language acquisition is both a cognitive process, and a social process, which must take place within the context of social interaction (Saville-Troike, 1982).

The human communication process develops not only through verbal forms, but also non verbal cues of which gestures and facial expressions play an important role. These verbal and non verbal forms of communication frequently occur together, forming a functional whole, which is known as 'speaker synchrony' Oksaar (1983). Therefore all the components of a 'communicative event' are potential input to the child's construction of linguistic meaning (Slobin, 1967; cited in Saville-Troike, 1982).

Halliday's (1975) functional interactional approach is consistent with this view, claiming that children learn the meaning of language because of the systematic relation between what they hear and what is going on around them. The children's intent to communicate arises naturally out of the system of shared assumptions and understandings which result from the regularities and rituals of their early socialization (Cook-Gumperz, 1977; cited in Saville-Troike, 1982).

Halliday (1975) suggested that the child's limited social world can be viewed as comprising a very limited number of ways of behaving that are expressed symbolically. These ways of behaving are the uses to which the child puts his language, the latter being the set of vocal symbols he has invented. "The content or meaning of any protolinguistic expression is thus to be derived from one of six microfunctions" (Painter, 1984 pp. 47-48).
Instrumental, Regulatory, Interactional, Personal, Imaginative and Heuristic.

Before describing Zoe's protolanguage, an explanation of the 6 microfunctions (taken from Painter, 1984) shall be provided.

4.2 Functions of Protolanguage

4.2.1 Instrumental

According to Halliday, this is the use of language to obtain goods-&-services. It involves using the adult to act on the environment on the child's behalf, but it is the possession of the object or the result of the service (getting the door opened, the cardigan unbuttoned) rather than the exercise of control over some specific individual which is at stake for the child. This particular distinction is clearly going to be hard to validate for a child constantly in the company of only one adult, since it requires observing whether the child is concerned about who provides the object or service, provided it comes.

4.2.2 Regulatory

This is described by Halliday as the use of language to manipulate the addressee, and is directed at a particular person who is required to perform some action - typically 'do that again' in the first instance. The distinction between instrumental and regulatory has sometimes been misunderstood as one between obtaining goods on the one hand and services on the other (see, e.g. Edwards, 1978; McShane, 1980). In fact it is rather one of focusing on the person (regulatory).

4.2.3 Interactional

This is the use of language to gain and maintain the attention of the addressee for the sake of the interaction itself. It obviously requires the presence of an interactional partner as does the instrumental, but is not directed towards an end other than the being in interaction. Eye-contact
between child and adult during the vocalization was a key recognition criterion used, especially to distinguish these from personal signs. Eye-contact is probably the most readily observed evidence of attending to another person, but doubtless many additional small signs of body language, etc. are also involved and contributed to an intuitive feeling on my part as to whether an utterance was interactional or not.

4.2.4 Personal

This is the use of language to express the self and the self's awareness of the environment. Feelings, reactions and curiosity about the world all come in here. This function is distinctive in that it does not depend on the participation or even the presence of an addressee. On those occasions when the child is not in any kind of interaction with an adult at the time of speaking, the personal function will be easily recognizable. However, these signs will also be uttered when the child is engaged in some activity with the adult. But unlike interactional utterances, personal signs in such a case will be uttered with the child's attention on the external features of the environment engaging his attention, rather than involving any preliminary establishment of eye-contact with the partner. And although the adult may well respond to the child's vocalizations just as for interactional ones, this is not looked for by the child. Given the fact that a demanding baby, especially a first one, may be in almost constant interaction with an adult partner, and that the adult is often working to achieve shared expressions of feeling and reaction, and given that interactions with the other are often mediated by objects in the environment, there is clearly quite a lot of scope for ambiguity between personal and interactional functions, even though the most clear-cut cases appear totally distinct. This potential for ambiguity would not cause great difficulties provided we can recognize the signs from the unambiguous occurrences, but it is also the case with my data, and to some extent with Halliday's, that some of the sign-expressions themselves occur in both functions. In other words, the same sign-expression occurs in context which meet all the interactional criteria.
(eye-contact, expectations of acknowledgement), and again in contexts which are manifestly personal (no adult attending child, child does not look up or round at any addressee, does not repeat utterance on failing to get a response).

While this may be interpretable in terms of the common pattern that both 'private' explorations of the outside world and interactions mediated by objects eventually provide contexts for naming, it may equally well suggest that the functional framework is imposing an untenable distinction on the data and needs reworking. It may be that 'pure' interactional utterances need to be distinguished from those mediated by objects, and that the latter should be related more directly to non-interactional utterances where attention is focused on objects.

4.2.5 Imaginative

This is the use of language to create an environment and develops into a world of 'let's pretend'. There is no great difficulty in recognizing pretend play, and Halliday also treats early sound play and rhyming games as imaginative, since the child is exploring a world (of sound) that he has created himself, rather than the given material one.

4.2.6 Heuristic

This is the use of language to find out about the environment. It is the last protolanguage function to appear in Halliday's description of Nigel's language, and its appearance is probably a signal that the language is changing its functional orientation. To account for my data, it would have been superfluous to introduce this as a distinct protolinguistic function, since it is subsumed in the mathetic macrofunction of Phase 11 (taken from Painter, 1984 pp. 52-53).
4.3 **A Description of Zoe’s Protolinguistic Development**

For each stage of protolinguistic development, beginning at 8 months, an outline of the language will be provided, noting developments as they relate to the study’s objectives.

This outline will be followed by a general summary of protolinguistic development in point form up until and including the specific stage under study. Included in this diagramatic summary will be the linguistic functions identified and the number of linguistic options and expressions utilised within each function.

Notes follow this general summary which provide details of the relevant functions, the linguistic options the child uses and the social contexts of use, which help to make clear the resulting analysis. Within these notes will be a description of the language itself, summarised in a Table format. Each Table outlining the relevant functions, the options used, linguistic expressions (according to the International Phonetic Alphabet) and an adult interpretation of what each realisation means.

4.3.1 **Zoe’s Language - From Birth to 8 Months**

Zoe’s grunts and squeals conveyed to her parents, her needs and desires. Whether they were hunger squeals or grunts of pain, her mother especially seemed to be able to identify different needs by different utterances.

Tape and video recordings identified the many changes in tone and pitch of these cries. However transcribing with any accuracy in the earlier
months proved almost impossible and so was abandoned. It was noted that high pitched squeals appeared to receive more urgent reaction as did prolonged grunts or groans.

Video tapes at 0:4 months show not only these grunts and squeals in action, but an increase in the body motions accompanying the sounds. When Zoe squealed her hands and arms waved around and her legs stretched outward. Her head would move from side to side and on occasions be thrust backward. When she lay more content, her body actions were calmer and she enjoyed patting or running of her hand along your skin.

At 0:5 months, Zoe could sit up, with pillow assistance, hold a book, manipulate it around and into her mouth. She would smile at familiar faces or when she heard familiar voices.

Between 0:5 months and 0:8 months many more sounds were experimented with. At 0:8 she favoured certain sounds, which she repeated more often than others.

4.4 Zoe's Language - At 0:8 Months

The communicative event from which the data is described revolves around the normal Saturday morning routines, including, getting up, breakfast, play, bath and dressing. A summary of Zoe's communicative acts can be found in Table 3, page 56. They are interpretable within three functions: Instrumental, Interactional and Personal.

It should be noted that Zoe from this early age engaged in the Instrumental or 'I want' function of language. Her demands were lengthy,
especially if there was no adult response. Zoe continued her fascination and interest in books, toys and other objects. She would lie on the floor for quite long periods, manipulating the various objects which inevitably ended up in her mouth.

Figure 6
A Summary of Protolinguistic Development - 0:8 Months
4.4.1 **Notes on Zoe's Language - 0 : 8 Months** (Table 3, pp. 56)

4.4.1.1 **Instrumental**

Zoe would demand attention or to be given something by a high pitched [i::]. This was accompanied by an outstretched arm, as if pointing to what she wanted. Softer, but no less persistent was the [m3 :) utterance. Zoe consistently alternated between the two expressions no matter what she wanted or who was to provide them.

4.4.1.2 **Interactional**

(1) **[Recognition]** When Zoe recognised her father after work, she would smile and say [θ:]. This was always followed by her father's verbal acknowledgement. This was also used when she woke, towards both parents. If Zoe enjoyed some activity and wanted it to continue she would utter softly (m: m:) and smile. This utterance could be interpreted to border on the Instrumental and Personal functions, although both parents felt the function was interactional. Zoe used these utterances while maintaining some eye contact with her parents.

(2) **[With Objects]** Zoe would roll around with the object she was playing with, hold it out towards one of the parents and say [m θ or gν:] quite loudly. This produced normally a verbal response by the parents which seemed to satisfy her, and she continued on with what she was doing.
4.4.1.3 **Personal**

(1) [Relaxing] Following a feed, Zoe would lie peacefully on a rug in the sun, or in an adult’s arms and hum or sing to herself [% : ::].

(2) [Action]

(2a) [With Toys] When playing or manipulating a book or toys, in much the same situation as above, with no adults around.

(2b) [Using Sounds] Zoe would reproduce many sounds, from her environment. She seemed to enjoy approximating them. Whilst doing so she was not relaxing but quite active, not unlike when she played with her toys, except on these occasions, they were not around. The range and inconsistency of these squeals and giggles made it impossible to record them with any accuracy.

**TABLE 3**

*Zoe’s Language at 0:8 Months*

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Expression</th>
<th>Tone</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental</td>
<td>general demand</td>
<td>1:: ; m::</td>
<td>mid-high</td>
<td>I want that</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I want more</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I want help</td>
</tr>
<tr>
<td>Interactional</td>
<td>recognition (1)</td>
<td>m::; (; smile)</td>
<td></td>
<td>I like that</td>
</tr>
<tr>
<td></td>
<td>with objects (2)</td>
<td>g:: (; smile)</td>
<td>mid</td>
<td>It’s you</td>
</tr>
<tr>
<td></td>
<td></td>
<td>m:: ; g::</td>
<td>mid-low</td>
<td>See what I’m doing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Look at what I’ve done</td>
</tr>
<tr>
<td>Personal</td>
<td>relaxing (1)</td>
<td>1:: : :</td>
<td>low</td>
<td>I’m happy</td>
</tr>
<tr>
<td></td>
<td>with toys 2a</td>
<td>3:: ; v::</td>
<td>low</td>
<td>This is interesting</td>
</tr>
<tr>
<td></td>
<td>action (2)</td>
<td>various high and low</td>
<td>low</td>
<td>pitched sounds - squeals and giggles</td>
</tr>
</tbody>
</table>
4.5 **Zoe's Language - 0.8 - 0.10-1/2 Months**

The 'communicative events' from which the data was collected included - morning play, lunch, play in the swimming pool, outside play in the yard.

By 10-1/2 months the options within the functions of Instrumental, Interactional and Personal had expanded. This is apparent especially in the personal function. Several expressions carried over from 0.8 months, [ə:] in the 'interactional' function and the [ə : ] when relaxing which serves the 'personal' function of language. This sound [ə:] is noted in both functions serving an affectionate role. 'I'm happy', 'It's you'. The difference is highlighted by the tone she places upon the sound, the duration of it and the non verbal gesture. A rising tone plus a smile as her mother is about to pick her up, a longer falling tone as she lay on her back, on her sheepskin. Linguistic expressions characteristic of this period are shown in Table 4, page 60.

4.5.1 **Non Verbal Bilingual Understanding**

It was around 10 months that both parents began noting her non verbal responses to verbal directions. For example, when her mother asked her to 'ven aqui' (come here) she generally would and vice-versa with her father in English. Whether she could fully understand the expressions at this stage or whether her responses were being governed by a combination of oral expression and physical gestures, is difficult to ascertain. However, it was noted that she did respond in differing communicative events to similar
parental expressions on numerous occasions.

The non verbal language distinction suggests that Zoe is at this stage developing, more as a 'receptive bilingual', that is, distinct from a 'productive bilingual'.

Figure 7
A Summary of Protolinguistic Development 0:10 1/2 Months
4.5.2 Notes on Zoe's Language - 0:10 1/2 Months (Table 4, pp. 60)

4.5.2.1 Instrumental

(1) [General Demand] Zoe in a pointing like arm gesture, demanded an object. A developmental feature from 0:8 months is the pronounced -ə-sound at the end of the expression [i:ə]. Both sets of grandparents interpreted the expression as an approximation for the English word 'here', reinforcing it as such. The English grandparents repeated the word which was followed by a further repeat in a sentence.

10(6)
Zoe: [i:ə]
English grandfather: Here, you want it over here? I'll get it for you. (The word 'here' on the initial repeat was spoken clearly and slowly, highlighting the intonation change.)
The Spanish grandparents followed a similar reinforcement procedure only in Spanish.

10(13)
Zoe: [i:ə]
Spanish grandparents: esto - quires esto Zoe. (This - you want this Zoe?)

(2) [Demand Action] Two expressions [məmə] and [əvə] were used interchangably within this option. Both illuminate Zoe's developing independence. If either parent failed to adhere to these signs, Zoe would repeat them on a distinctly rising tone. This repetition and tonal change hints at the beginnings of a 'regulating function' of language. However, Zoe did not direct the expression at any one individual, therefore at this stage, the function of the expression as originally used remains.
TABLE 4

Zoe's Language at 10 1/2 Months

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Expression</th>
<th>Tone</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>general demand (1)</td>
<td>i:ô</td>
<td>mid</td>
<td>I want that</td>
</tr>
<tr>
<td></td>
<td>demand action (2)</td>
<td>ñ</td>
<td>mid</td>
<td>I want you</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mama ; ava</td>
<td>mid</td>
<td>I want to do it myself</td>
</tr>
<tr>
<td></td>
<td>with objects (1)</td>
<td>ge ; go</td>
<td>mid</td>
<td>Watch me / look at me playing</td>
</tr>
<tr>
<td></td>
<td>recognition (2)</td>
<td>ha: (+ smile); ø</td>
<td>high</td>
<td>It's you</td>
</tr>
<tr>
<td></td>
<td>greeting</td>
<td>audjdg</td>
<td>mid rise/fall</td>
<td>You talk I'll talk</td>
</tr>
<tr>
<td></td>
<td>just talk (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>relaxing (1)</td>
<td>a:</td>
<td>mid low</td>
<td>I'm happy / I'm content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a: ; i:</td>
<td>mid rise</td>
<td>I'm not very happy</td>
</tr>
<tr>
<td></td>
<td>unhappy 2a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>feelings (2)</td>
<td>a: (+ smile, cuddle)</td>
<td>mid rise/fall</td>
<td>I love you / I feel safe with you</td>
</tr>
<tr>
<td></td>
<td>safety / love 2b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with toys 3a</td>
<td>go ; ko ; ø ; í</td>
<td>mid low</td>
<td>This is interesting</td>
</tr>
<tr>
<td></td>
<td>involvement (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>using sounds 3b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>eating 3c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>taste 3ca</td>
<td>wám</td>
<td>low</td>
<td>I like this</td>
</tr>
<tr>
<td></td>
<td>act of 3cb</td>
<td>waw:</td>
<td>low</td>
<td>I'm doing it</td>
</tr>
</tbody>
</table>
4.5.2.2 Interactional

(1) [With Objects] A typical exchange in a playtime situation would see Zoe turning to the video camera (or adult) uttering one of the expressions listed, continuing on with what she was doing then suddenly stopping, looking up again and saying the same thing again before continuing on with what she was doing.

(2) [Recognition: Greeting] Zoe continued to use this expression as described (0:8 months) on a high rising tone with familiar adults - mother, father.

(3) [Just Talk] This was interpreted to be a conversation prolonging device Zoe would use like a game she played in order to interact with others. Not all this interaction took place with human objects as she would, at times, try it out on her toys. The T.V. also became a fascination at around 0:10 months and she would use this expression quite often while looking up at the screen from a prone position on the floor.

4.5.2.3 Personal

(1) [Relaxing] This continued as at 0:8 months. Several recorded instances on audio and in field notes note her when alone, following a feed, producing this expression very softly.

(2) [Feelings] Two feeling options within this category.

(2a) [Feelings: Unhappy] Produced on a rising tone and generally accompanied by a whole body jolt, or a thrust of the head backward. The non verbal action, as a rule, was ignored by both parents. When
acknowledged, the parents would soothe her by patting and speaking in calm soft voices.

(2b) [Feelings: Safety/Love] After being picked up, or while being nursed by either her mother or father, Zoe would initiate the expression [əːː]. The expression was generally accompanied by the placement of her head on a shoulder and a gentle patting on the persons arm or back.

(3) [Involvement] Three options within this category.

(3a) [Involvement: With Toys] A range of sounds, two similar phonemically - [ɡə], [kə] (on a mid-falling tone). Almost personal labels, although not repeated with the same objects with any degree of frequency.

(3b) [Involvement: Using Sounds] These continued although with a notable increase in the frequency and the joining or blending of them together into longer units.

(3c) [Involvement: Eating]

(3ca) [Taste] Spoken softly on a falling tone Zoe illucidated her preferences in food types. Although at this stage she would eat almost anything.

(3cb) [Act] Zoe initiated what is interpreted to be a personal pleasure in satisfaction in the act of eating. She would utter to herself [wʌw]. 'Member checks' (Spanish speakers) interpret this to be an approximation for the word ‘guagua’, which in Spanish means baby. Zoe's mother reinforced the utterance by repeating the word as the following transcript illustrates.
Sitting in her chair, eating toast, looking at her tray.
Zoe: waw (softly and repeated once).
Mother: si guagua, mi guagita linda (yes baby, my beautiful baby).

4.6 Zoe's Language - 0:10 1/2-12 Months

The 'communicative events' from which the data was taken include
general play situations with and without her parents, breakfast and lunch,
and a visit to her Spanish grandparents. Linguistic expressions
characteristic of this period are summarised in Table 5, page 68.

It was in this period that a regulatory function of language emerged.
Transcripts of communicative play events show her use of the general
request - [gθ:] - in order that an activity be repeated, regulating the behaviour
of the other participants. The following selection of transcripts exemplifies
this.

12(1)
001 - Mother: Mira lo que encontre, mira. (Look what I found, look.)
(Mother places Zoe in a sitting position and demonstrates again the horn
blowing.)
002 - Mother: Muestra le a Petey (places horn in Zoe's mouth). Show Petey.
003 - Zoe places horn in mouth and makes a squealing sound as if blowing
the horn. Zoe then gets up and walks over to her father.
004 - Zoe: d*1
005 - Father: What have you got darling?
006 - Zoe:gθ:
007 - Father: Do you want Petey to blow it?
008 - Zoe: a v
009 - Mother: Zoe, Zoe, tocasela a Petey Zoe. (Zoe, Zoe, play it for Petey Zoe).
010 - Repeat.
011 - Zoe walks back over to her mum with trumpet outstretched toward her.
012 - Zoe: gə, gə
013 - Mother makes horn blowing sound, Zoe smiles, mother repeats.

The transcript of play activity highlights Zoe's use of gesture and vocalisation which leads her mother to repeat the horn blowing routine at her request. The transcript provides an illustration of Zoe's growing understanding of both languages. Answering questions posed by her father (005-008) and responding to statements made by her mother (009-012).

4.6.1 Zoe's First Words

This stage also highlights the use of linguistic expressions which are assigned as labels to her mother [ma:] and father [dæ dæ]. The [ma:] expression was used also as an instrumental expression for assistance. The term was also not specific to her mother as noted on many occasions the person who adopted the role of principal 'caregiver' (father, grandmothers, grandfathers) was also referred to as [ma:].

The determining factor in this cross functional use of the term was the tone of the expression. When referring to other people as [ma:] and demanding some form of action, the tone was a mid rise. When used in greeting her mother the tone was a low fall. In effect, Zoe had two functional meanings for the one expression. The expression [dæ dæ] was, on the other other hand, only applied to her father, although as noted, if he was looking
after her for any length of time, he would also be called [ma:].

Figure 8
A Summary of Protolinguistic Development at 12 Months
4.6.2 Notes on Zoe's Language - 12 Months (Table 5, pp. 68)

4.6.2.1 Instrumental

(1) [General Demand] The expressions within this option changed and included a more distinct pointing gesture. The expressions indicate the initial sounds of the English words - mum and dad - however, she would use them with all who took caregiver roles in order to get what she wanted.

It should be noted that there existed a range of labels used by both parents and grandparents when referring to either her mother or father - mother - Chechy (nickname) used by father and most Spanish relatives.

- Syl, Sylvia, used by father, English grandparents, and mother's brothers and sisters.
- mum, mummy, used by father, English grandparents, and mother's brothers and sisters.

A similar range was used for the father marking an inconsistency or breakdown in english-spanish linguistic demonstrations.

(2) [Demand Action] Zoe would use the expressions in general situations: when she was stuck behind the lounge, wanted to get out of the bath etc. Her use of the expression [mɑː] is as described at 4.5.2.1(2).

4.6.2.2 Regulatory

(1) [General Request] Zoe would request that an action or activity be repeated, for example tickling or playing on a swing.

(2) [Intense Request] Following the many linguistic demonstrations provided by both parents, Zoe picked up this expression with astute
reference to appropriate contexts. The expression was used quite loudly and in a mid-high rising tone. The body actions which often accompanied the expression included turning her head to the side (away from the food provider) and or a slapping or pushing with a hand(s) to prevent the other participants continuing the action. The expression has the phonological and intonation characteristics of the English word 'no'.

4.6.2.3 Interactional

(1) [With Objects] Zoe would physically include others into her play by handing them the object(s) and proceed to tell them about it.

(2) [Recognition] Two options within this category.

(2a) [Recognition: General Greeting] The expression didn't change, however she added to it, at times, by holding out an arm as if in acknowledgement. This, at times, confused some people, into thinking she wanted them to pick her up, to which generally she responded [a u] or 'no!'

(2b) [Recognition: Personal Greeting] The first labels that Zoe used with any consistency. The context of use being on the mother's or father's arrival home after work. The vowels were weakly stressed on a mid falling tone.

(3) [Response to] This was expressed very softly and in response to other participants. The interpretation made is that Zoe maintains the interaction by producing first the [ʌːəː] expression, and in situations where the conversation begins to break down follows the expression with [mɪnɬdəv].
Both expressions served the same purpose, i.e., maintaining or sustaining the communicative interaction.

**TABLE 5**

**Zoe's Language at 12 Months**

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Expression</th>
<th>Tone</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>general demand (1)</td>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumental</td>
<td>demand action (2) - help</td>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- get out</td>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>general request (1)</td>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulatory</td>
<td>intense request (2)</td>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with objects (1)</td>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactional</td>
<td>recognition (2)</td>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>personal greeting 2a, 2b</td>
<td>father</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>response to (3)</td>
<td>mother</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>feelings (1)</td>
<td>relaxing la, pleasure lb</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>eating pleasure lc, unhappy lc</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td>involvement (2)</td>
<td>with toys 2a, with sounds 2b</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For example:

- **General demand**: (1) dʌ; mʌ (+ point) mid: I want that
- **Instrumental demand action**: (2) aː aː, mʌ (- both arms outstretched) mid rise: I want help
- **General request**: (1) geː mid rise/fall: Do that again
- **Regulatory intense request**: (2) aː mid high: No!
- **Interactional general greeting with objects**: (1) oː; ɪ; ga mid: Here you are
- **Personal recognition**: (2) dæ da mid fall: Daddy
- **Response to feelings**: (3) eːː; æːː long low: I'm happy / I'm content
- **Involvement with toys**: (2) aː; various squeaks, squeals and hums mid low: These are interesting

---

**Table continued...**
4.6.2.4 **Personal**

(1) [Feelings] Four options within this category.

(1a) [Feelings: Relaxing] No change (0:10.5 months).

(1b) [Feelings: Pleasure] When Zoe enjoyed something, for example, having her hair combed or having her back patted.

(1c) [Feelings: Eating Pleasure] When she liked the taste of something, especially bananas.

(1d) [Feelings: Unhappy] Prior to crying or screaming.

The [3:] expression had disappeared completely, as did the safety or love option.

(2) [Involvement]. Two options within this category.

(2a) [Involvement: With Toys] Phonetic variations of the -əv- expression.

(2b) [Involvement: With Sounds] Zoe continues to experiment while playing alone with various sounds, loud and soft. The duration of these sounds increased with notable blending of the different sounds - humming interspersed these lengthy sound expressions with dramatic tonal variations.

4.7 **Zoe's Language - 12-13 1/2 Months**

The range of 'communicative events' remained generally consistent with earlier transcripts. One exception, an added major participant "Pamela". A Spanish/English speaking aunt who had a tendency, while baby sitting, to 'switch' languages when addressing Zoe.

There is a noted increase in the range of adult language sounds, representing lexical items of both languages. The father and English
speaking grandparents' responses to Zoe's language resulted in a linguistic response ritual of "I say it, you say it". This ritual increased in frequency, particularly during play time and dressing communicative events. Zoe would often join many of these linguistic approximations with various squeaks and squeals, making transcription with any accuracy difficult, if not impossible.

During this period, the social context altered. The result of her mother and English grandmother (nana) working was that her English grandfather looked after her for nine days, and her Spanish grandparents for four days of this period. The increase in adult language sounds in both languages is attributed to this social context change. Both the English grandfather and Spanish grandparents, not having an intimate knowledge of her needs and wants, relied upon questioning in order to satisfy them, e.g., Zoe, do you want the apple or banana?

Linguistic expressions at 13 1/2 months are summarised in Table 6, page 77.

4.7.1 **English/Spanish - A Linguistic Distinction**

Zoe's language at 13 1/2 months includes the first interpreted linguistic distinction between English and Spanish. The use in relevant contexts, of the expressions [ænə] - 'nana'; [ɛlə] - abuela; [ɡə d və] - gato (cat) and [bəbə] - baby; [wæ wæ] - guagua (baby), indicate the beginning of English/Spanish linguistic labelling.
It is not suggested that Zoe distinguishes the two languages, rather, she is beginning to label as part of the same language (protolanguage) system, features which were interpreted and verified through member checks as approximations of separate English/Spanish lexical items.

Another feature was the use of phonological elements which were reinforced orally and through intonation, in both languages - [bʌ] for bath or [bANO] for baño - a similar phonetic sound.

It was during this period, from 12-13 1/2 months, that two significant linguistic changes occurred. The first involved Zoe meeting for the first time, both grandmothers in the same social context; her home. Both parents noted the linguistic confusion which resulted from this meeting. In a predominantly Spanish speaking social function, Zoe began to interchange her expressions for nana (English grandmother) and abuela (Spanish grandmother). Up until 12(20) she had in separate contexts never done this. This interchanging of expression did not result in the 'normal' positive feedback. Instead both grandmother's reacted in similar fashion by saying:

"...no, I'm nana, that's ..."

"...ye no say tu nana, say abuela..."

Zoe, for several weeks, following this communicative event referred to both grandmothers as [mɑː].

A similar 'dropping' of an expression was noted by Zoe's mother as the following extract from the field note journal illustrates.
"When the dog next door was barking Zoe pointed toward the bedroom window in the direction of the sound and said 'pʌpi' (English - puppy). I hesitated before saying 'el perro Zoe'. When the dog barked later the same day Zoe pointed towards the sound and said 'woof' [pʰə]. (Woof had been a general term for all animals prior to this event). I felt by not initially providing positive reinforcement to the English approximation, which was the normal routine, I had confused her.

4.7.2 Non Verbal Development

Zoe continued to use non verbal actions to accompany her language. Changes in tone and the presence/absence of other participants assisted in the classifying of similar utterances in one or more functions [aː] when playing on her own, then repeated on a mid-rising tone, meant - I want or need help, whereas [aː] in the presence of others accompanied by an outstretched arm, walking to and hitting the door - was interpreted to mean lets go outside.

4.7.3 Related Language Development

Book reading became a focus in the period between 12-13 1/2 months. Although not sitting out the reading, Zoe would obtain a book, walk over to her nana (English grandmother) or father and sit on their lap with it. In response to a question or statement regarding her intention, Zoe would respond [bɤ] and begin turning pages.
Father: Arh, so you want me to read the book do you?
Zoe: [bʌv] (pages turned).

4.7.3.1 Notes on Zoe's Reading

When selecting a book for reading, Zoe would pay close attention to the specific book she wanted. Often refusing [əvər] one selected by the adult. Zoe's mother read Spanish books to her and wrote Spanish with her. Zoe's reading like behaviour included holding the book, turning the pages and locating by pointing [gʌdə] - cats. While all readers attempted to read the entire text, Zoe would often close the book, get up, leave and come back at infrequent times.

4.7.4 Imaginative Function Development

Following a family outing to El Caballo Blanco (a local animal farm) and Zoe's first horse ride, she would climb on to people's backs (whilst they were lying on the floor), make a clicking sound and rock back and forth as if pretending to ride. Once this expression and body action gained a response, this pretending game became an almost daily activity.

A bed time ritual involved singing to her. Zoe began this high singing herself when dancing and playing with her dolls.

These two activities and the expressions used accordingly are believed to be Zoe's means of recreating features of her own environment - "imaginative pretences".
Figure 9
A Summary of Protolinguistic Development at 13 1/2 Months
4.7.5 Notes on Zoe’s Language - 13 1/2 Months (Table 6, pp. 77)

4.7.5.1 Instrumental

(1) [General Demand] Accompanied by one or both arms outstretched on a mid to high tone.

(2a) [Specific Demand: Action] This was a demand for action or help when she was stuck, couldn’t do something or had fallen over. [aː ə] was repeated several times, usually on a rising tone.

(2b) [Bath] Zoe would walk up the hall, knock on the bathroom door and say [bʌ ]. When asked what she wanted by either parent, she repeated the utterance. Once inside she would stand by the bathtub one hand in it, the other motioning to her parents or grandparents while repeating the utterance. The sound [bʌ ] was reinforced by all major participants English and Spanish.

(2c) [Drink] A specific demand for a drink. Generally, fruit juice. Pointing to her cup or the juice she would announce either [v] or [I :]. Both sounds may be approximations or mimics of the English sounds in the word juice - [v]; Spanish sounds in the word heugo [v].

4.7.5.2 Regulatory

(1a) [General Request: Initiated] A range of expressions, notably on a mid tone. Used when Zoe wanted something, she would walk over or look directly at the person she was talking to, as in the following case.

Zoe, while trying to put a plastic lid on a jar notices a broken spoon in Pamela’s hand. She looks up at Pam, at the spoon, then back at Pam [gʊ ɡa]
"can I have it?" Pamela gives the spoon to her, she looks carefully at it, "ak gol gol" - "thanks for that" - a one off response expression.

(1b) [Negative Response] Continued use of expression when she didn't like something. At times she would become frustrated and repeat a number of times the expression [əʊ w] on a long mid tone in the same manner. Used in response to an event or being presented with goods or services she didn't like in which she didn't want to participate.

(2) [Specific Request] To any participant who came through or went out of the front door, or when she heard the jingle of car keys.

4.7.5.3 Interactional

(1) [With Objects] Two options identified.

(1a) [With Objects: General] Combinations of various sounds strung together. Many variations were utilised always in the context of showing an object - toy, book, leaf, snail - to someone. These sounds are interpreted as a separate option even though no definite articulation can be made of the expressions.

(1b) [With Objects: Initiate] Zoe would initiate a book reading by obtaining a book, handing it to her mother, nana, or father and sitting on their knee and announcing [b u].
<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Expression</th>
<th>Tone</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>general demand (1)</td>
<td></td>
<td>3 (one or both arms outstretched)</td>
<td>mid high</td>
<td>I want that</td>
</tr>
<tr>
<td>Instrumental u</td>
<td>action 2a</td>
<td>a: a</td>
<td>mid rise</td>
<td>I want help</td>
</tr>
<tr>
<td></td>
<td>bath 2b</td>
<td>b: i</td>
<td>mid</td>
<td>I want a bath</td>
</tr>
<tr>
<td></td>
<td>drink 2c</td>
<td>u: (point)</td>
<td>mid high</td>
<td>I want a drink</td>
</tr>
<tr>
<td>specific demand (2)</td>
<td>initiate 1a</td>
<td>yoga; y;</td>
<td>mid</td>
<td>Will you give me that?</td>
</tr>
<tr>
<td></td>
<td>negative 1b</td>
<td>owe:</td>
<td>long mid</td>
<td>Stop that</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No I don't want that</td>
</tr>
<tr>
<td>general request (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reguatory u</td>
<td>specific request (2) initiated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>general 1a</td>
<td>running/blending of sounds together</td>
<td>-</td>
<td>Here you are...</td>
</tr>
<tr>
<td></td>
<td>initiate 1b</td>
<td>b: v</td>
<td>low rise/fall</td>
<td>Let's read the book together</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Interaction u</td>
<td>recognition (2) personal</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>greetings-father</td>
<td>d: d:</td>
<td>mid</td>
<td>daddy</td>
</tr>
<tr>
<td></td>
<td>another</td>
<td>n: a</td>
<td>mid low</td>
<td>many</td>
</tr>
<tr>
<td></td>
<td>grandmother</td>
<td>o: n:</td>
<td>low rise/fall</td>
<td>grandma</td>
</tr>
<tr>
<td></td>
<td>grandmother</td>
<td>c: h:</td>
<td>mid</td>
<td>abuela</td>
</tr>
<tr>
<td></td>
<td>action 3a</td>
<td>a: ke</td>
<td>low</td>
<td>thankyou</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>response to (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>conversation 3b</td>
<td>various blends of sound</td>
<td>-</td>
<td>Let's just talk</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>relaxing 1a</td>
<td>a:</td>
<td>mid low/fall</td>
<td>I'm content</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>feelings (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pleasure 1b</td>
<td>a: m</td>
<td>mid low</td>
<td>I like that</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>unhappy 1c</td>
<td>i:</td>
<td>low rise</td>
<td>I'm not happy (cry approaching)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal u</td>
<td>active involvement (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>toys 2a</td>
<td>ta: ; a: ; eu</td>
<td>mid low</td>
<td>This is hard work</td>
</tr>
<tr>
<td></td>
<td>eating 2b</td>
<td>n:</td>
<td>mid</td>
<td>Yum, I like the taste of that</td>
</tr>
<tr>
<td></td>
<td>general 3a</td>
<td>a: ; a:</td>
<td>mid</td>
<td>This is interesting</td>
</tr>
<tr>
<td></td>
<td>interest (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>specific 3b</td>
<td>pa-pa-pa ; papi</td>
<td>mid low</td>
<td>dina</td>
</tr>
<tr>
<td></td>
<td></td>
<td>baba ; wa wa</td>
<td>mid low</td>
<td>pato (cat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>baby, guagua</td>
</tr>
<tr>
<td></td>
<td>pretend play (1)</td>
<td>clicking sound</td>
<td>mid</td>
<td>I'm riding a horse</td>
</tr>
<tr>
<td>Imaginative u</td>
<td>singing (2)</td>
<td>baba-baba</td>
<td>wide</td>
<td>I'm singing</td>
</tr>
</tbody>
</table>

**TABLE 6**

Zoe's Language at 13 1/2 Months
(2) [Recognition]

(2a) [Recognition: Personal Greetings] Earlier forms of generalised
greeting disappeared as Zoe became very quiet with anyone unknown. She
would address known persons with expressions which would result in their
reacting, as in the following case.

Zoe enters Spanish grandparents living room. Michael (uncle)
approaches and greets Zoe. Zoe walks past Michael towards the mini
trampoline (stored behind the lounge), points, looks directly at him and
requests [go ga] (regulatory request) that he set it up for her (which he does).

This type of action was typical of Zoe, especially when she had been
refused an object by one person and someone else entered the situation.

(3) [Response to] Two options within this category.

(3a) [Response to: Action] Spoken softly following a model provided by a
adult or child. Generally when receiving goods.

(3b) [Response to: Conversation] When others were talking around her
Zoe would climb up or sit beside a person and produce random blends and
sounds, not unlike those expressed when interacting with objects. An
exchange would take place and Zoe would then climb down and go on to
something else.

4.7.5.4 Personal

(1) [Feelings] Three options identified.

(1a) [Feelings: Relaxing] Zoe continued to use the expression when
cuddling before a sleep. The frequency of occurrences diminished.
(1b) [Feelings: Pleasure] Used when happy, when playing or while watching others playing.

(1c) [Feelings: Unhappy] Continued use as described earlier and when events or happenings did not agree with or suit her.

(2) [Active Involvement] Two options identified.

(2a) [Active Involvement: Toys] Zoe would push, pull, prod, open and close objects on her own for quite some time. As Zoe played and experimented with the objects, she also played with various sounds. Unlike 'interactional' functions these were more pronounced. Favourite objects or toys included - a car, books, dolls, Duplo (large Lego) pieces, pegs, plus a number of soft toys and puppets.

(2b) [Active Involvement: Eating] Used frequently in anticipation of involvement in eating. Both English and Spanish families reinforced the expression 'yum' in the eating context.

(3) [Interest] Two options identified.

(3a) [Interest: General] Sitting in a supermarket trolley, Zoe found fascination with various containers and wrappings. This interest was brief, unlike [active involvement: toys], as each was examined, tried out for taste and passed over. Zoe would point to pictures and objects, generally making no effort to report her interest to either parent.

(3b) [Interest: Specific] Zoe came in contact with animals almost from birth. In the play situations, especially in the Spanish communicative situations, these animals featured. Zoe would always follow them around and grab them whenever possible, much to their annoyance. If she heard a dog bark
she would stop, listen, and point. By 13 1/2 months after spending several longer periods in the Spanish communicative situation she had developed a one to one match, expression to animal. When her father referred to a cat or pictures of a 'cat', Zoe would correct him by saying ['gA dve'] Spanish 'cat'. A dog was always a [p\pi] or [p\ap]. The third significant English/Spanish development was Zoe's use of [b\a b\a] - baby [waw\a] - approximation for [gua gua] - Spanish baby. These expressions were used interchangeably. Zoe referred to pictures of dolls and all small children as either a [b\a b\a] or [waw\a], no matter whom she was addressing.

Note on Spanish/English Development

Zoe was developing some control over the linguistic expressions of both languages. The expressions were labels for objects - names for people. At this stage she understood much more than she could articulate and could follow more detailed instructions in both languages - 'shut the door', 'open the drawer', 'go and get your coat, bring it here'.

4.7.5.53 Imaginative

(1) [Pretend Play] Following a family outing and Zoe's first horse ride, Zoe adopted a velar clicking sound. She would sit atop her large bear, dog, or father and produce it. When she noticed a picture of a horse or an actual horse, she would start this sound up. It is interpreted to mean "I'm pretending to ride a horse".
(2) [Singing] Playing with pitch, Zoe would carry around her dolls and sing to them. She would alternate the vowel sounds maintaining the [b] consonant.

4.8 **Zoe's Language - 13 1/2-15 Months**

The range of communicative events remained relatively consistent during this period; some taping was undertaken in play situations with two English speaking cousins - Brad and Jason.

As Zoe's attention span lengthened, communicative event increased in frequency as did the number of communicative exchanges with individuals. The 'you say, I say' ritual continued notably in the English linguistic context. Language demonstrations in these contexts became more specific, with Zoe's attention being drawn to articulation by frequent repeats of a word in sentences and in isolation, as the following transcript exemplifies.

14(21)
Zoe: (pointing to a bowl of fruit) [ʔaːnə].
English Grandfather: What do you want, Zoe?
Zoe: [aːnə].
English Grandfather: You want a banana?
Zoe: 
English Grandfather: Say ban-nan-a (spoken slowly as he peels the banana).
Zoe: [aːnə].

The range of protolinguistic utterances and options increased notably. Table 7, page 89 provides a summary of the language at 15 months. A feature was her use of similar expressions serving different functions. Three
selections of transcript illuminate this 'cross functional role' of one linguistic expression [bν] - book.

Zoe, with a book in her hand, would walk towards her seated father, turn around and back in onto his lap. [bν] she would say, [bν]. If he did not respond she would 'headbutt' his chest and repeat [bν] until he began reading - (regulatory; "read me the book").

Walking around the house, Zoe would approach her parents, grandparents or visitor. She would hold out the book, her expression would begin with a combination of unclear sounds and end with [bk]. If unsuccessful with one, Zoe would move onto another individual or group - (interactional; "lets read the book").

Playing on her own in the living room behind a foam lounge settee, Zoe would be rummaging through her toy box. As she picked up and tossed aside her books, the expression [bk] was used again - (personal; books).

4.8.1 English/Spanish - Linguistic Distinction

Zoe continued in this period to use distinctive expressions which were interpreted to be 'more English' or 'more Spanish' in sound. Expressions such as [βν] - jugo (juice); [dʒ] - juice - being used in order to obtain her fruit juice, indicate a distinction in expression, but not in meaning. If one failed to get a response then she would use the other. Zoe would, at times, differentiate between tea in a similar fashion, [ti] - tea, and [te] - te (tea).
Zoe continued to use [g\text{\textalpha\textcircled{a}}] - g\text{\textalpha\textcircled{to}} (cat) to describe cats and she used [d\text{\textalpha\textcircled{a}}] (dog) and [\beta\epsilon\beta] in reference to dogs. Cats or g\text{\textalpha\textcircled{to}}'s could be pointed to in books, real life, or drawn and she could distinguish them. Despite English responses to her expression as illustrated.

Father: What's this Zoe?
Zoe: 'g\text{\textalpha\textcircled{t\theta}}
Father: Yes, its a cat.
Zoe: g\text{\textalpha\textcircled{t\theta}}.

Zoe continued to use the Spanish sounding expression, making no attempt at the English label - cat. These types of expressions are regarded as linguistic approximations of 'mother tongue' (her mother's language), 'father tongue' (her father's language) lexical items.
Figure 10
A Summary of Protolinguistic Development at 15 Months
4.8.2 **Notes on Zoe's Language at 15 Months** (Table 7, pp. 89)

### 4.8.2.1 Instrumental

1. **[General Demand]** Two groups of options identified.

1a) **[General Demand: Initiated]**

1aa) **[Assistance]** Whenever Zoe was stuck, wanted to get out or generally require assistance. Used with a mid to rising tone.

1ab) **[Object]** Focussing upon the object she wanted, Zoe would say [mv] and look around for someone to give it to her. If no one was present in the room she would repeat the expression, pointing at it until someone came in or she lost interest.

1b) **[General Demand: Response]** Used in response to actually receiving what she wanted or when asked if that was what she wanted.

2. **[Specific Demands]** Three options identified.

2a) **[Specific Demand: Action]** Changed to a more regular high tone squeal. Repeated several times.

2b) **[Specific Demand: Goods]** Accompanied by a pointing gesture, Zoe would indicate (generally) the goods she required. Zoe's linguistic approximations contain elements of adult sounds: [a:na] - banana; [u:z] - shoes; [dɛ βv dʒ] - drink.

It is interpreted that these expressions are, in fact, Zoe's attempts at 'labelling' or 'naming' the content of her specific demands.

2c) **[Services]** The need to differentiate between goods and services become apparent as Zoe's range of specific demands increased. The services demanded included [b] as described before; [æθ] as described at
13 1/2 months in the Regulatory function only on a falling tone. The content of her demand being specific, the focus of her expression at this stage more general. [ʌ] and [əʊ] were generalised approximations for pick me up, and I want to get down. The [ʌ] accompanied by both arms stretched upward.

4.8.2.2 Regulatory

(1) [General Request] Two options were identified.

(1a) [General Request: Initiated - Normal] Zoe would request that an action or game be repeated, as this following transcript recorded the daily bath time ritual.

001 - Father: Watch out Zoe, close your eyes.
(Father pours a container of water over Zoe's head, using his hand to shield her eyes).

002 - Zoe: ʒ: wei dd

003 - Father: You like that eh, want me to do it again?

004 - Zoe: ʤ

005 - Father: O.K., watch out, ooh!, good girl. More?

006 - Zoe: nəv(no).

(1ab) [Intensified] Louder, rising tone variation.

(1b) [Response]

(1ba) [Positive] In answer to a question asked by either parent. Examplified in the above transcript 003; 2b [negative] as described 006.

(2) [Specific Request]

(2a) [Go Outside] As described (13 1/2 months) only directed at a specific individual.
Zoe: mʌaːə (walking to mother and then to door).
Mother: You want to go outside? (Quieres ir para afuera?)
Zoe: aːə

(2b) [bʊvː] As discussed pp. 82 when considering cross functional utterances.

4.8.2.3 **Interactional**

(1) [With Objects] Two initiated option groups were identified.

(1a) [Initiated: General] Continued with various combinations of sounds of which some could be identified. The range of interpretations, dependent upon the content of the social context. What Zoe was playing with, where, and with whom.

(1ba) [Specific: Reading] As described when requesting a book reading.

(1bb) [Specific: Pictures] In this option Zoe would assign a woof woof sound [βəβ] to pictures of dogs and [ɡətʃ] to cats. She would, at times, assign the label of woof woof or [də] to any hairy animal, not a 'gato', impervious to the names (labels) accompanying sounds provided by the reader. She focused upon the pictures of these animals in books also.

**Note - Bilingual Distinction**

Whilst Zoe had begun to move along a bilingual continuum, the links between reception, production and successful application were beginning to occur. She understood generally what a dog was, she approximated the adult word and could apply a broad generalisation.
When asked about the pictures, Zoe responds by attempting some new sounds, but seeks out familiar objects, animals. If she wanted the person she was interacting with to say the name (sound) she would point to the animal and look at the person. Various sounds were used in this context, none with any consistency; sometimes none at all.

Father: What's this Zoe?
Zoe: bυ(a book).
Mother: Adonde esta el gato Zoe?
Zoe: gato (thumping finger or fist onto page).

While Zoe could identify dogs very generally, she could in detailed illustrations, locate gatos (cats).

As before, these expressions involved the arrival of different people into the house or Zoe entering into another's. Zoe at times continued to call her father [m\v]. Similarly, she would, if left at either grandparents overnight or during the day, call both grandmothers [m\v]. It would seem that [m\v] in Zoe's classification system meant 'the one who looks after me' or the 'principal caregiver'. Whilst this extended meaning of the expression 'm\v' occurred, Zoe never referred to her mother as anything but [m\v], whereas after a time she would revert to calling the others by her personally assigned expressions for them [a\n\v], [vε\l\a].

When the cat or dog came running in, Zoe greeted them with appropriate signs, that is, with the exception of a specific maltese terrier which Zoe consistently referred to as a cat.
# TABLE 7

## Zoe's Language at 15 Months

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Expression</th>
<th>Tone</th>
<th>Interpretation</th>
</tr>
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<tbody>
<tr>
<td>general demand</td>
<td>(1)</td>
<td>initiated 1a</td>
<td>assistance for a task</td>
<td>mid low</td>
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<td></td>
<td></td>
<td>initiated 1b</td>
<td>object lab</td>
<td>mid high</td>
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<td></td>
<td></td>
<td>response 1b</td>
<td>hands outstretched</td>
<td>mid low</td>
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<tr>
<td>specific demand</td>
<td>(2)</td>
<td>initiated 2a</td>
<td>action lab</td>
<td>mid high</td>
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<td></td>
<td></td>
<td>initiated 2b</td>
<td>goods lab</td>
<td>mid high</td>
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<td></td>
<td>initiated 2c</td>
<td>services lab</td>
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<td>general lab</td>
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<td>initiated 4b</td>
<td>货物 lab</td>
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<td></td>
<td>initiated 20a</td>
<td>looking for dog lab</td>
<td>mid</td>
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</tbody>
</table>

### Notes:
- The tone column indicates the pitch of the voice.
- The interpretation column provides a natural English translation of the child's speech.
4.8.2.4 **Personal**

A noted change in the linguistic network of Personal options - the condensing of the 'active involvement' and 'interest' options into 'observation' options. Zoe produced expressions which she appeared to comment more upon general and specific observations of interest and involvement.

(1) [Feelings] This group of options developed with additional personal feelings being utilised.

(1a) [Feeling: Surprise] When something unexpected happened, like falling off her toy car, the expression was accompanied by a high fall tone.

(1b) [Feeling: Displeasure] Upon emptying the contents of a meal over her head, making any kind of mess, paint on her hands, or when emptying a cupboard.

(1c) [Feeling: Taste Pleasure] When she liked something. Similar sound to the word 'Yum' which both parents used.

(1d) [Feeling: Love/Content] As discussed in earlier months, reemerged as a functional part of her linguistic network.

(1e) [Feeling: Self Satisfaction] Expression accompanied a successful act like climbing from the floor onto the breakfast bar to the phone, or standing in her high chair. Always expressed with a smile on her face, and a mid tone.

(1f) [Feeling: Unhappy] Additional expression [3ː]; used with a frown, in the same manner as described at 13 1/2 months.

(2) [Observations] Two options identified.

(2a) [Observations: General] Used to express general interest and
involvement in an activity. A wide tonal use, although generally mid to falling.

(2ba) [Observations: Specific - Speech] When saying goodnight to her father and accompanied by a kiss and hand wave.

(2bb) [Observations: Specific - Familiar Objects] Zoe consolidated her use of mother tongue speech, notably 'gato', and mother/father tongue expressions such as [bəbi] - baby, [waːwə] - baby. It should be noted that the Spanish expressions [waːwə] were favoured and almost always used first.

Apart from these, Zoe extended her labelling or naming of objects and people in her immediate environment. They were not as developed and are not regarded as attaining the same status as [gato], [bəbi] or [waːwə], due to the phonological closeness to their adult related lexical items. However, all the expressions were used in a variety of contexts. The reasons for grouping these names/labels under personal as opposed to an interactional function the absence of any eye contact with the adult at the time of mimicking. Painter (1984) suggests that this was best seen as an indication that a Personal learning function was developing. The expressions, not so much in acknowledgement of the adult model, but rather being used for the child's own purposes of learning.

4.8.2.5 Imaginative

It was in this period that Zoe broadened her make believe play situations. Zoe would attempt to place nappies (diapers) on her dolls and
teddy bears or walk around her home repeating 'gato', 'β-ɔ' (woof, woof) looking for the imaginary animals. The animals in reality only existed at her grandparents' and aunts' houses. On several occasions Zoe would sit beside her largest (baby life size) doll 'Kizzi' with a book and show her the pictures of the 'gatos' and 'dogs'. These situations are her imaginative transfer of real situations. In the reading example, it may be argued that Zoe is, in reality, practising reading like behaviour and there is nothing 'pretend' about it. The inclusion of significant lexical items in this manner extends the potential of her protolinguistic functions as no longer are they governed by the here and now, or the utilisation of past experience. Imaginative play adds a new interactional possibility.

4.9 Zoe's Language - 15-16 1/2 Months

A noted increase in expressions occurred within this period. The consolidation and further development of these expressions, many of which represent phonological similarities with lexical items from both languages, indicates the initial movement into the 'transition stage' (Phase Two) (Halliday, 1975) of linguistic development.

Phase Two marks the 'transition' from a protolinguistic system, based upon semantic choice, into the adult linguistic system. See Table 8, pp. 101 for a summary of Zoe's language at 16 and a half months.

Between 15 and 16 1/2 months, Zoe developed more 'functionally unrestricted' expressions, recognisable as father tongue (English) [ʃ] fish, [dʌ]door; and mother tongue (Spanish) [tɛ] (tea), [tuta] Spanish slang for
sleep, [nɔ] no, words.

The following transcript exemplifies these 'functionally unrestricted' expressions.

16(0)
001 - Zoe: playing in the laundry points to Father's thongs.
002 - Zoe: ʒ's (These are shoes).
003 - Mother: Yuk Zoe, que estas hasieudo?
004 - Zoe: ʒ's (I'm playing with daddy's shoes).
005 - Zoe walks past mother pointing to her bedroom.
006 - Mother: Adonde vas ahora?
007 - Zoe: mʌmI əu ʒ's (I'm going to get my shoes).
008 - Mother: No Zoe, tienes los zapatos.
009 - Zoe returns with a pair of her shoes, sits beside her mother, looks up.
010 - Mother: No Zoe, tienes los zapatos puesto's.
011 - Zoe: Iː ʒ's (pulls off one of her shoes).
012 - Mother: Zoe
013 - Zoe: ʒ 's

The expression [ŋs] (013) in this context is recognised as serving a Personal function or 'These are shoes'. A naming concept is seen to be developing; an Interactional - I'm going to get my shoes, in response to her mother's question and a Regulatory function - I want you to put these shoes on.

4.9.1 Heuristic Function Development

Another related feature of the language at 16 1/2 months was the developing Heuristic or 'Tell me why' function of language, (a development of the Personal and Interactional functions). Whilst specifically relating to the
'mathetic' macrofunction, a feature of Halliday's (1975) second Phase (Painter, 1984), some features in the evolution of Heuristic function development are evident.

The use of naming began initially as mimicking adult models when interacting with picture story books, and was followed closely by her using the same name (sounds) when reading or playing on her own. At 15 (21), Zoe began to use the initiated interactional expression [lʊk], with a finger point when naming specific animals in books and in the wild. Unknown animals Zoe would generally classify along with one of the known names. Both parents praised these general classifications following them up with the actual name which Zoe would mimic if she felt like it. This advent of the Heuristic function changed the Interactive situation as can be seen in the following transcript at 16 (10).

Zoe playing in sandpit with father. Zoe walks across to the garden and pulls a leaf from a bush.
Father: Zoe, don't pull leaves off.
Zoe: (bending down).
Father: What have you found? (walks over).
Zoe: Lʊk (look what I've found).
Father: Oh that's a snail, be careful, gentle, that's the girl.
Zoe: Aːk.
Father: No, its not yuk; see its all sticky so it can hold on to things.
Zoe: ⊗ (snail retracts body into shell).
Zoe: dædev (daddy, tell me where its gone).
Father: Its just hiding, see its gone back into the shell.
Zoe walks away.
The Heuristic - 'Tell me why' - function had begun to develop. In the transcript Zoe's curiosity 'where did it go' indicates this development.

4.9.2 Non Verbal Development

Zoe continued in this period to use non verbal actions to accompany many of her expressions. However, with the development of recognisable expressions - names - Zoe depended less upon non verbal behaviour to semantic context. Expressions would be repeated several times before non verbal gestures accompanied them.

While eating, Zoe would ask for $[\hat{\beta}u]$ without (initially) making eye contact or pointing. If, after several repeats her request was not met, she would then gain her parents' attention, repeat the expression with a pointing gesture. Many of these expressions were prefixed by her expressions for mum, dad, nana etc.

Looking into the video camera carry case.
Zoe: $d\check{a}d\check{I}s$ (daddy what is this).
The video camera had fallen over onto Zoe's foot.
Zoe: $m\check{a}m\check{k}$ (mummy, my foots stuck).

4.9.3 Related Language Development

Zoe continued to show an interest in specific picture books, notably 'Hairy Bear', 'Yum and Yuk' which she would carry around inside and outside the house. Zoe would allow part of the book to be read then she would turn the pages, at times initiating exchanges or responding to
A Summary of Protolinguistic Development at 16 1/2 Months

Figure 11

Protolanguage - 16 to 17 Months (4.5)
- Emergent regulative function
- More frequent requests for related language
- Turn-taking in reading activities
- Increased use of questions with personal pronouns
- More frequent use of related language

Related Language
- Increased use of related language
- More frequent rereadings
- Use of pointed objects
- More frequent questions
- Increased use of related language

Development
- Emergent regulative function
- More frequent use of related language
- Increased use of questions
- More frequent use of related language

Instrumental
- Emergent regulative function
- More frequent use of related language
- Increased use of questions
- More frequent use of related language

Interactional
- Emergent regulative function
- More frequent use of related language
- Increased use of questions
- More frequent use of related language

Personal
- Emergent regulative function
- More frequent use of related language
- Increased use of questions
- More frequent use of related language

Heuristic
- Emergent regulative function
- More frequent use of related language
- Increased use of questions
- More frequent use of related language

Linguistic
- Emergent regulative function
- More frequent use of related language
- Increased use of questions
- More frequent use of related language
There was also a noted increase in Zoe's desire to use pens, pencils, and textas for writing or drawing. If her father was writing she would protest loud and long until being picked up, sat on his knee and allowed to draw/write with him. These prewriting behaviours were encouraged and kept as part of a related study:
- holding writing implement in a fist-like grip.
- circular scribbles.
- dots and short strokes.
- turning pages over, writing/drawing on each side then turning to next page.
- talking to herself whilst writing.

4.9.4 Notes on Zoe's Language - 16 1/2 Months (Table 8, pp. 101)

4.9.4.1 Instrumental (two general groups identified)

(1) [General Demand: Initiated]

(1aa) [Normal] Used when Zoe wanted something or when she was tired. The [m:] and [ɔ:] expressions were used with adults and children. If she did not acquire what she wanted on occasions she would drop to the floor, initiate a rather intense [ʃːː] expression which may or may not involve tears - 1ac.

(1ab) [Assistance] This expression developed with the addition of the consonant k [k]. It is interpreted as a demand for help. It is interpreted to be a linguistic approximation for the English word 'stuck'.


(1b) [Response] This sign was used in response to the father’s modelling of the word 'yes'. While used infrequently, it indicates how close Zoe could approximate or mimic when she wanted to.

(2) [Specific Demand: Objects]

(2a) [General] A common expression used in conjunction with the non-verbal act of walking over to the pantry cupboard or refrigerator banging on it, then attempting to open it. It is seen as a separate demand option to the food/drink classification as she could name and request various food and drink items and could interact and regulate others to open and shut doors. The sign was often preceded by the naming of specific objects.

* Zoe walks to fridge door, places hand on, looks at gap between door and side wall (the opening).


(2ab) [Specific Demand: Objects - Initiated] Zoe could now request or demand several goods and other objects by name. Other than the juice - jugo as described at 15 months, Zoe developed four other specific expressions which she would name in her demands. These were [bvk] - book, which included newspapers, magazines and notepads, [gato] - cat and [ips] - chips, which included fried and packaged types.

(2ac) [Specific Demand: Objects - Response] Having heard these names, Zoe would repeat them over and over. Other signs were used in this fashion though not initiated by her. She would indicate she wanted these items using a general demand. This would be followed by a parent providing the object or rejecting her demand. In so doing, the parent(s) would generally
use the name of the object in their response which she would repeat.

15(21)
Zoe: mːːmː; ʒ
Father: No Zoe, you can't have anymore fish.
Zoe: iːiː iːː

(2ba) [Specific Demand: Services - Initiated] Zoe would verbally initiate many of the daily routines. All of the expressions listed were accompanied by specific nonverbal actions. Walking into her room, Zoe would bring out a new pair of shoes (slippers), sit down, pull off a shoe and demand [ʒːʒ] to have her new shoes on.

Zoe would not leave the house without demanding her [ʒv] - coat, be put on. She would point to it on the coat rack, or drag it out of her cupboard before leaving.

(2bc) [Specific Demand: Services - In Response To] Following interjections used commonly by both parents, Zoe’s expressions may be regarded as approximations of the language expressions [uː] - Pooh, [k] - Yuk.

4.9.4.2 Regulatory

(1) [General Request] Two groups of linguistic options identified.

(1aa) [General Request: Initiate - Normal] Zoe would initiate a request for an activity or action to continue. These expressions were accompanied by nonverbal behaviours such as hand clapping, dancing on, once the record had finished etc. Eye contact was made with the person to whom she was addressing the request.
A record has just finished.
Father: You’re a beautiful dancer.
Zoe: 3 : pointing to turntable.
Father: You want some more music?
Zoe: εỹ: - starts spinning before the music begins.

(1ab) [General Request: Initiate - Intensified] As described above only on a rising high tone.

(1ba) [General Request: Response - Positive] When Zoe was asked a question by an adult.

(1bb) [General Request: Response - Negative] In response to adult or child actions she did not want to continue. Common non verbal action was to turn her head or push away the person or object.

(2) [Specific Request: Initiated] In addition to the two expressions described at 15 months, Zoe would ask to shut the door. A sliding door fascinated her, she would walk over to one parent, look up at them, point to the door and say [dυα]. The request was, at times, for the parent to get up and shut it, at other times it was as though she was asking permission to shut it herself.

A noted development in her pronunciation of the word book [bυk] was the addition of the consonant ‘k’. Zoe would practise this word over and over, especially in the Personal mode whilst clearing the study or library shelves of books.
### Zoe's Language at 16.1/2 Months

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Expression</th>
<th>Tone</th>
<th>Interpretation</th>
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<td>General Demand</td>
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4.9.4.3 Interactional

Notes on the development of Heuristic.

As suggested Zoe's language was entering a new and exciting developmental Phase. She was using language to interact and find out about her environment. A development of the Interactional function, the 'Tell me why' or Heuristic function of language. Her close attention and familiarity with books provided one context from which this new language function evolved.

In her interaction with objects, Zoe would request a book be read (as described). Throughout the reading she would initiate and respond to the pictures. Her attention may be drawn to familiar objects which she would name.

Reading the book 'Hairy Bear'
Zoe: (pointing to the bear) [L.uk teddi]
Father: Good girl, that's a teddy bear - growl.

Zoe's attention would, on occasion, also be drawn to unfamiliar objects (notably animals or cartoon characters). On these occasions she would say [l.uk] (mid tone), point to the object, look to the reader and do one of two things - attempt to group the new object, e.g., rabbit with a known name or animal sound, or repeat the [l.uk] expression, this time with a longer rise fall tone, while exchanging glances with the adult reader. The linguistic expression [l.uk] was significant as it provided the ideal interactive prelude to an inquiring action. 'Look, what is this? Tell me about it...'
Attention was also drawn to Zoe's use of the expression \[\text{[autj]}\] - ouch, when touching something hot or when approaching something which could have been hot (heater). Zoe, on several occasions would touch the heater, hold out her finger and say \[\text{[autj]}\] - ouch. When a new person entered the environment who had not witnessed the act, she would hold out her finger to them, say \[\text{[autj]}\] and then point to the heater. On other occasions before drinking she would look at the 'drink giver' and say \[\text{[autj]}\] as if enquiring as to whether it was hot or not.

The last example (the drink episode) indicates how Zoe was using the 'ouch' expression in an Heuristic manner. While these examples and others described in 1c do not justify a separate function; when combined with the other Heuristic examples, there is a clear indication of a change in Zoe's language function, towards a more adult like use.

(1c) [With Objects: Shared Feelings] When Zoe hurt herself, bumping her head, touching the heater, or when being reproached (gentle smack on the hand) or when she wanted sympathy, she would say \[\text{[autj]}\]. Zoe would walk into the kitchen, rubbing her head say \[\text{[autj]}\] - ouch. It was not always necessary for an adult to witness the incident. In fact, the following transcripts describe instances of Zoe recalling these situations for the other parent.

(i) Mother returns home from shopping. Zoe greets mum at the front door with her hand outstretched.

Zoe: \[\text{[autj]}\] - ouch. Zoe turns and points at her innocent father.
(ii) Zoe slips and falls while painting with her father, hitting her head. Mother walks over towards Zoe who is crying.

Mother: que paso?

Zoe: [qu^f] rubbing head and pointing to the paint.

(iii) Zoe deliberately empties her fruit juice on to the floor. She is reproached. Next morning at breakfast Zoe picks up her 'popper' and is about to do the same thing again, looks at both parents "au^f" she pronounces, smiling she places the juice back on her tray.

(2a) [Recognition: Specific Objects] When Zoe approached or found pictures of these objects she would name them. On occasions adding the expression [lu^k] - look, to the name.

Zoe lu^k gato (look its a cat).

(2b) [Recognition: Personal] As described, the expressions were more definite due to clearer articulation of them. The situation of confusing grandparents did not occur. Zoe’s personal expressions with the exception of [m^J], [d^J d^J], (mum, dad), were rarely used when the person was not present. That is, if the person was not physically present Zoe rarely used her expressions for their names. An oral/visual relationship existed.

(2c) [Recognition: Farewell] Always spoken softly and on rare occasions. May or may not be accompanied by hand wave.

4.9.4.4 Personal

The personal options relate to feelings of involvement and observations of involvement in the social context.
(1) [Feelings] The linguistic options remained much as they had been, with little or no change. Only one additional option - pride - was added.

(1a) [Feelings: Pride] Zoe would stand in front of the mirror, either looking at what she was wearing or at herself. Twisting from side to side she would then approach the mirror and kiss it. This option was seen to be separate from the love and content option, as the non verbal actions are very different. The pride utterance was used on a number of occasions, notably following her hair being done or after having her clothes changed.

(1b) [Feelings: Surprise] Continued as before, no significant non verbal action accompanying the sound.

(1c) [Feelings: Displeasure] A notable decrease in the frequency of use, although maintained at meal time. (Zoe's ability to communicate her needs and wants more effectively in other functions could account for this decrease.)

(1d) [Feelings: Self Satisfaction] Following her involvement in an activity - book reading, crashing lego together, Zoe would smile, look up, say [i::].

(1e) [Feelings: Unhappy] As described.

(1f) [Feelings: Love/Content] Decrease in frequency of use, otherwise continued as before.

(1g) [Feelings: Taste - Pleasure] Addition of the [rj vowel consonant. Used to express pleasure or satisfaction as food was placed into her mouth.

(2) [Observations] Observation options within the personal function are seen to relate directly to the reorganisation within the Personal network towards Heuristic function development. Following her involvement in
activities and interactions within her environment, Zoe would group the objects/activities by name or characteristics.

(2a) [Observations: Characteristics - Time] Zoe produced two expressions used in specific communicative events with specific people. If her mother was putting her to bed she would use the expression [tuːto] - Chilean slang for asleep. When addressing her father she would use the expression [aːnə] - goodnight.

This is the first identified occurrence where parental linguistic roles have been clearly separated. In fact, both parents were unaware of the difference until it was identified during a review of field notes. It would appear that during the 'putting to bed' ritual, performed by either parent, Zoe linguistically identified which parent she was addressing. The expression was justified by both parents aurally, however, audio and video were not able to pick up the softly expressed sounds. The expressions began at 16 m (3) in response to parent demonstrations to a point where at 16 m (17) she initiated the expression as she lay down with the parent. If both parents were present Zoe would produce little or no identifiable expressions.

(2b) [Observations: Characteristics - Temperature] Any object which was hot was identified using the expression [aʊtʃ]. The objects themselves - teapot, heater, bath were not named in the Personal network, although bath was named in the Instrumental function.

(2c) [Observations: Names] The range of object and personal names continued to increase and develop. The names classified were initiated by
Zoe, when they were present, in photos, in books, or as if predicting what or whom she would meet.

4.9.4.5 Imaginary

The games of seeking the cat and dog continued. All games would appear to have an imaginative element - like climbing onto her father's back and making her clicking sound (horse); opening the cupboard, getting out a bottle and then proceeding to feed all her animals and bears; putting mother's necklaces on and walking around with her bag. Possibly the most obvious pretend play was her use of a hand puppet named 'Lynsay'. Zoe would feed him, cuddle him [a:] and manipulate his mouth so it appeared he was talking or biting.

In addition to these types of pretend play situations, Zoe would sing along with the radio, particularly whilst travelling in the car. The sounds followed various rises in pitch and length of expression.

4.10 Conclusion

The collection of data for the purposes of this paper concluded at 16 1/2 months. Whilst the focus of this paper has been upon the protolinguistic development of Zoe's language, it is anticipated that data will continue to be collected up until she enters school. The focus of this future research will be upon continued bilingual linguistic development and other related language features, notably her reading and writing development, as a bilingual language learner.
CHAPTER 5

SUMMARY/CONCLUSIONS
5.1 Introduction

The main purpose of this study was to monitor, describe and analyse one child's protolinguistic development in a bilingual setting. The innate and active orientation of this child, to the creative construction of language, marks her as a unique member of her sociocultural environment. "Each child's language, being absolutely unique" (Lindfors, 1987 pp. 217).

Zoe's language is unique in that it draws specifically upon her life's experiences; the people, the objects, the events, the actions which characterise her world.

In many ways 'Zoe' shares with other children, at a general level, characteristics of language acquisition. However, at a specific level, her language is 'unique' to her (Lindfors, 1987).

As stated in Section 1.5, p. 11, the findings of this study cannot, as a result of language 'uniqueness', be generalised or applied to the majority. Some features will, however, be compared with monolingual studies, notably those of Halliday (1975) and Painter (1984) who have utilised similar data collection and analysis techniques.

This chapter will provide a summary of Zoe's protolinguistic development noting the similarities and differences compared to Halliday's and Painter's studies. Included, will be specific features of linguistic development which have emerged from analytic description, implications of the study as a model concluding remarks and suggestions for future research.
5.2 Zoe's Protolinguistic Sound System

Random sounds and expressions moved toward recognisable 'mother tongue' - 'father tongue' lexical items in the first year. The beginnings of more organised expressions occurred at 8 months and were grouped within the 'instrumental', 'interactional' and 'personal functions'.

Similarly, Halliday's (1975) son, Nigel and Painter's (1984) son, Hal, developed their first vocal expressions around this period. Hal, unlike Zoe and Nigel, did not develop an 'instrumental' expression until 9-10 1/2 months (Painter, 1984).

Zoe continued, throughout this protolinguistic phase, to develop a range of options within the functions as outlined, a distinct difference between Zoe and Hal, being the development of the regulatory function. Zoe began regulatory type behaviour and expressions in the period 10 1/2-12 months. Nigel has recorded signs at 10 1/2 months whilst Hal only utilised non-verbal behaviour to regulate a person's behaviour. The first vocal signs appearing at 16 1/2 months.

All three children employed the most profuse number of linguistic options within the interactional and personal functions. Painter (1984) indicates the reason for this being that these functions are more 'reflective', requiring meaning options more dependent on a symbolic means of expression (Painter, 1984 pp. 91).

The size of Zoe's protolanguage increased steadily until 15 months when there was a noted increase in the number of meaning options. At 13 1/2 months, Nigel had 32 signs, Hal had 17 and Zoe 26 expressions, with 2
or 3 overlaps.

Other similarities between the protolanguages of Zoe, Hal and Nigel include:

- A distinction between initiating and responding throughout the system (Zoe, Nigel).

- A shared sign, where the adult is invited to share with the child (Nigel and Zoe).

  Nigel - 'shared regret'
  Zoe - 'shared feelings - hurt'

- Non verbal requests for names (Zoe and Hal) - pointing gesture whilst making eye contact with the other participant.

- Verbal expressions which indicate a request for a name, or which draws attention to objects within the environment.

  Nigel - 'a::da' - you say what it is.
  Zoe - 'Lu:k', with non verbal gestures which focuses the adults attention on an object, who then gives the name.

- Instrumental demands, although linguistically 'unique', did relate to specific objects of importance. Zoe differed by using an expression within this function in a context not utilised by either Hal or Nigel. That is her general expression for assistance. 'Ak' - a phonological approximation for the English word 'stuck'.

- The identifying and maintaining of contact with specific adults (Nigel, Hal, Zoe). Although in Zoe's case the number of these expressions is considerably more than either Hal or Nigel. This could be due to the...
changing sociocultural context utilised by the parents in their effort to provide a more balanced linguistic input. Zoe developed phonological variants with these greetings and like Hal changed the intonation and stress according to whether the interaction was general or more intimately specific. Unlike Hal and Nigel, Zoe dropped the general greeting expression between 12-13 1/2 months, preferring to use non verbal gestures when or if acknowledging unfamiliar persons at all.

Finally, Painter in her summary of linguistic similarities with Halliday, notes similarities in use by Hal and Nigel of personal sign expressions which convey interest in the external environment, and interactional contexts where the environment in some manner mediates the interaction (Painter, 1984 pp. 93). For Zoe, like Hal, these language expressions accompanied first hand experience with objects in both the personal and interactional contexts, recognition of objects in pictures being a later addition for Hal in both contexts. Zoe's familiarity and interest in books, from 0-5 months resulted, however, in an almost parallel use of linguistic expressions relating these first hand experiences and pictures. Many of the feelings expressed in the personal function and interactive requests directly related to shared book reading situations. Non verbal behaviours, as indicated in the transcripts, assisted in the transfer of personal interests in objects found in books or real life experiences to interactional contexts.
5.2.1 First Adult Sounding Words

The first clear approximations of adult words for Zoe occurred between 10 1/2 to 12 months. The words related to the interactional and instrumental functions of language. Nigel's first possible imitation of an adult word occurred at 9-10 1/2 months while Hal's first word appeared during the 13 1/2 to 15 month period.

As discussed in the transcripts, one of Zoe's first words was (ma:); Painter (1984) distinguishes these types of expressions apart from 'true names', as they would appear to be linguistic signs which have a complex range of meanings. In Zoe's case, however, the closeness of the approximation to adult form, the contextual use and tonal differentiation suggest that, general as it may be in its use, the expression is a true name. This is also backed up by the recognition and naming in pictorial form of the person.

Similarities which exist between the first adult sounding names relate specifically to their interactional use. McShane (1980; cited in Painter, 1984) also provides evidence for an interactional route to the understanding of names.

Zoe's first names, other than principle caregivers, were 'gato' (cat) and 'book' in the 12-13 1/2 month period. These names, especially 'gato' were used almost immediately in situations removed from the first hand experience, i.e., with pictures of the objects. The names developed from signs used in the personal function. During an extended say in an almost total Spanish context, Zoe developed a 'gato' expression following what
could only be described as an intense fascination of the object in the environment. A non verbal pointing gesture led to the name being given. Zoe's classification of 'gato' like objects (as described in the transcripts) developed from the very general to the very specific. Interestingly, Hal's first word, other than caregiver signs, also related to a 'cat' label.

Zoe's development of lexical items such as 'gato' highlight views of language development held by Piaget (1926) and Vygotsky (1978). That is, the sociocultural experiences which form the basis from which meaning, and language develops (Piaget, 1926), and the use of language by others in her environment plays an important part in stimulating her actions and linguistic value placement (Vygotsky, 1978).

The use of language by an adult to 'draw attention' to objects which the adult finds 'significant' and meaningful, helps the child look at the world with a particular perspective, thus 'encouraging alertness' and 'stimulating curiosity' and 'interest' (Tough, 1976).

In "Thought and Language" (1968), Vygotsky shows how each time a particular word, i.e. (gato) is used, the child's attention is drawn to another instance of the concept. In time, the word comes to represent a general idea which has developed from many experiences (Tough, 1976).

In this study, Zoe used an expression for 'gato', cat, which at first was applied to all short hairy animals. But as she heard other words associated with other animals, notably 'puppy', 'dog' and 'ducks', she gradually began to focus upon the specific features of 'gatos' and began to distinguish them from these other 'developing' concepts or objects, i.e. dogs, ducks.
The development of lexical items may be traced back through the networks. Phonological variants of the word 'stuck':

- (æ) - 10 months
- (ə) - 12 months
- (ʌ) - 13 months, 15 months
- (ʌk) - 16 1/2 months

Other expressions begin as a result of repeated attempts at teaching by the father and English grandmother.

- (ænɛ) - 13 1/2 months - nana
- (ənːə) - 16 1/2 months - nana

Phonological similarities in Spanish and English are highlighted in Zoe’s early protolanguage, i.e. bʌ for bath; bano for baño.

Zoe, in some instances, showed a preference in the development of lexical items in one language over another. There is seen to be a clear understanding of the concept involved, otherwise she would not be able to express it in either language.

Whether this linguistic preference relates to Slobin's (1973; cited in Lindfors, 1987) notion that syntactic devices used in the production of an expression are simpler in one language than the other or as the data in this study suggests is directly related to language of the communicative event, when first exposed, is difficult to ascertain.

What can be stated is that some lexical items such as 'gato' and 'dog' were expressed only in one language whereas others such as 'baby' were expressed in both.
An examination of the linguistic networks allows us to look into the phonological subsystem of language. From this we may note the particular sounds which are significant, the arrangement of sounds and how they may alter when combined. However, examination of this type only suits to highlight the 'uniqueness' of language and that sounds are only given meaning by the language and context in which they occur (Lindfors, 1987). Other features which were identified through analysis of the data relate to bilingual language distinction, intonation, non verbal behaviours, parent sociocultural roles and the social context.

5.2.2 Bilingual Language Distinction

A major difference, given the social context of this study, relates specifically to the development of protolinguistic expressions which were interpreted to be more English or more Spanish in sound, that is, a bilingual language distinction.

The first distinct Spanish sounding expressions occurred between 12-13 months within the interactional and personal functions. It was, however, noted that between 0:8-0:10 1/2 months, Zoe could comprehend both languages in varying contexts, favouring what was described as a 'receptive' mode as opposed to a 'productive' mode of (bilingualism) language differentiation.

Her language development until 16 1/2 months is described as characteristic behaviour of a bilingual speaker. Zoe's language may be, in descriptive terms, traced as she moves along a continuum of bilingualism
Initially, Zoe's 'mother tongue' was Spanish and her 'father's tongue' English, providing a distinct yet simultaneous exposure to both languages, a 'simultaneous' bilingual. As she matured, she began to comprehend instructions from both parents, she had a receptive knowledge of her two languages - a 'receptive' bilingual. At 12-13 1/2 months she began a move into the production of language specific protolinguistic signs - 'productive' bilingual. Although she has not achieved the status of a 'complete' bilingual, her language to 16 1/2 months, as a whole, can be described as 'incipient', that is, developing toward a 'complete bilingual'.

From a 'minimalist' bilingual standpoint, then, Zoe began to show more formal outward signs of bilingual acquisition between 0:8-0:10 1/2 months. Prior to this stage Zoe showed signs of recognising her parents' voices, and responding to various intonations in speech. However, it was not until Zoe could act upon specific utterances (0:8-0:10 1/2 months) that the researcher was able to identify signs of language distinction.

It should be noted that these language distinctions were being made by adult observers and it is not being suggested that Zoe at any stage was aware that she was developing two separate languages.

5.2.3 Intonation

Different intonation patterns conveyed different meanings as indicated in Zoe's use of the expression [mʌ]. When expressed as a mid tone with hands outstretched, it conveyed the meaning "I want to get out". However,
when used on a low tone, the function was a personal greeting for her mother.

Dore (1973; cited in Painter, 1984) observed that the tones which eventually carried functional meaning may be used initially without specific phonemic intent. A feature of Zoe's tonal use first identified by her English grandmother concerned the fact that many of her expressions whilst not adult in sound, displayed the intonation features of English lexical items. Examples of this include:

- (a:u) - 12 months; mid high - no
- (gə) - 12 months; mid (rise fall) - yes

The length and stress placed upon an expression also provided indicators of adult like intonation patterns:

- (a:kə) - 13 1/2 months; low - thank you

Zoe, like Hal, by 12 months had begun to show a preference for higher level tones for the instrumental and regulatory functions; whilst the Personal and Interactional functions revealed a mid-low tone preference. These developments foreshadow later systematic use of tone cited in Halliday's and Painter's data from 16 1/2 months on.

5.2.4 Non Verbal Communication

The non verbal behaviours which directly related to linguistic communication varied from communicative event to communicative event. The facial gestures, a shrug of the shoulders, a slight tilt of the head or pointing gesture, in addition to intonation patterns assisted in the interpreting
the meaning of expressions.

Painter (1984) notes the significance of the pointing gesture which developed in both Hal and Zoe, between 10 1/2 and 12 months. "Many psychologists take it (the pointing gesture) as axiomatic that the pointing gesture is an interactional one, functioning to achieve joint attention to an object" (Painter, 1984 pp. 62). Zoe's use of gesture cannot be described as belonging within one functional network as indicated in the transcript. However, it is clear that interactions and interpretations were made easier because of it.

The other significant non verbal gestures were the making of eye contact and the outstretching of arms. The regulating, attention seeking behaviour of head butting, as outlined, disappeared almost completely as Zoe developed in her linguistic competence and more mature forms of non verbal behaviour: pointing, raising her arms, were utilised.

Throughout the study, non verbal behaviours made the interpretation of meaning possible. Zoe's linguistic expressions alone were insufficient in many instances to determine linguistic meaning intent.

5.2.5 Parent Sociocultural Roles

It is possible to identify from the transcripts a difference in the way language was 'demonstrated' by the parents and grandparents respectively.

Linguistic demonstrations are seen to be ways of showing the learner how something is done (Smith, 1981). These demonstrations were a showing, not a telling. As those around Zoe used language, either directly or
indirectly, it enabled her to determine the structures of language in various situations.

The general role of language use with and around Zoe provided 'incidental demonstrations' of language in use. There was, however, noted in one to one specific communicative events, a difference in the language demonstrations provided by her parents.

The father and both sets of grandparents generally responded to Zoe's linguistic approximations by asking questions: "What do you want Zoe?" then providing the word or saying the word, i.e. 'banana'. Then asking the question "Do you want a banana?" Both parties initiated conversation in much the same way. Zoe's mother on the other hand would ask the question "que res. . .?" (do you want. . .) but rarely repeated the name or word to which she was referring to. In the early stages of Zoe's development, up until 12 months, Zoe's mother had what she described as an "innate" understanding of her daughter's needs. This resulted in less mother-daughter communicative acts when compared with the father-daughter.

The noted increase in the linguistic options, and interpreted phonological closeness to adult words at 15 months is attributed to a change in social context resulting in her English grandfather and Spanish grandparents babysitting her continuously for the first time. The type of communicative exchange as highlighted, became a feature of the communicative events of that period.
5.2.6 **Social Context**

Language demonstrations in and around the child make up a linguistic milieu of language in use. It goes without saying that the language a child will learn is the language to which the child has more frequent access (Lindfors, 1987 pp. 195).

Zoe was, within her social context, a natural 'incipient bilingual'. She was developing a practical knowledge of two languages, Spanish and English. However, given the constraints of the social context it is not being suggested or implied that she would have an equal command of both languages. The father's tongue and mother's second language English, would, given continuance of the social context, always dominate.

Zoe's parents, in an endeavour to facilitate her Spanish development, have and will continue to utilise artifacts such as books, cassettes, games, T.V. programs and holidays as aids in her development of bilingualism.

In addition, a finding which relates to the social context has been the developing 'bilingualism' of the father. As his daughter progresses along the bilingual continuum, he does also, though at a much slower rate. This learning is also seen as a positive step in the maintenance and continued development of Zoe's bilingualism.

5.3 **Implications of the Study as a Model**

5.3.1 **Data Collection Techniques**

5.3.1.1 **Fieldnotes**

Though difficult to maintain, fieldnotes provided the most effective
means of data collection. They were reliable, non intrusive, and functional, in that linguistic expressions/interpretations could be noted at any time. There was a need to resist over generalising and to provide contextual descriptive features. These were added on occasions from memory.

5.3.1.2 Audio Tape Recordings

The benefits of tape recordings were the accessibility and storage of linguistic expressions. The need here was to add social context features or write them into fieldnotes. Several disadvantages related to the need for a supply of backup batteries, and the physical intrusion of the tapeplayer. Although the tape was small, Zoe would eventually see it, or hear it being switched on, and want to play with it.

Other problems include the microphone pickup. Although high quality the microphone was unidirectional, therefore picking up many, unassociated noises - lawn mowers, traffic etc. What would be recommended would be some form of radio lapel mike which could be placed, unobtrusively, without the child's knowledge of it. Transcription of tape data was almost impossible without field note summaries. There was also a need to transcribe soon after the taping, so context features were not forgotten. This was not always convenient. Frequent replays of the tapes during transcription stretched the tapes, ruining them, highlighting the need for back up copies.
5.3.1.3 **Videotaping**

Videotaping, though intended as the major data source provided many problems. Apart from the intrusion factor, Zoe believed the camera to be a special toy, only brought out on special occasions. The need for a portable all-in-one type camera (i.e. National M3, A3) was highlighted when Zoe managed to regularly turn the camera off when playing with the porta-pack unit. Like audio-recording, the need to make back-up copies of all tapes is essential as most original tapes were stretched beyond repair through countless pauses and rewinds, during transcriptions. Whilst providing an excellent means of recording the context of linguistic use and non-verbal behaviours, the uni-directional microphone provided similar problems to the audio microphone.

It must be concluded then, that despite questions in print, Butler (1985) Dore (1977) concerning the methodology of Halliday's study (1975), and subsequent suggestions that video recording should have been utilised; the video, in this study, while extremely useful in obtaining contextual information, created 'linguistic interference'. What was seen to be preferred, and as this study pioneered, was a triangulated approach to the collecting of data in a variety of contexts utilising three main methods of data collection. This assisted in the obtaining of what was ultimately seen to be credible data.
The transcription and credibility checking of data was a prolonged and tedious journey. The researcher was, as acknowledged indebted to, those individuals who shared the trip.

Two features arose from these processes which need to be identified. Firstly, the influence of what is termed a 'linguistic frame of reference'. That is each of the participants who viewed the videos or listened to the audiotapes brought with them a set of personal linguistic experiences. These experiences shaped the interpretations of what they saw and heard. In these member checks and peer debriefing sessions, each individual would draw upon his or her own personal linguistic frame in order to reach some kind of general interpretation. It became apparent very early in these sessions that those most involved in the communicative situations could relate, interpret and agree upon linguistic intent more often than those further removed from the situation. It was, however, deemed necessary to have these 'outsiders' in order to keep the researcher 'honest'.

Secondly, once transcribed, the linguistic functions in most cases became quite apparent. However in some instances, the functional intent was unclear. In these cases the expression was included in both functions. There is seen to be a fine line which distinguishes one linguistic function from another. Constant back and forth reference to function outlines, member check discussions and analysis of social context features were needed in these cases to determine the classification of linguistic expressions.

5.3.2 Data Analysis - Credibility Checks

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With established 'inclusion rules', problems of inclusion/exclusion of expressions were not apparent although excluded expressions were checked and re-checked for similarity of function characteristics, most proving to be random one off or linguistic practise expressions.

5.4 Conclusion

This study has attempted to describe and analyse one child's protolinguistic development in a bilingual context. The research was based upon data obtained through video-recordings, audio-taping and a fieldnote journal. The documentation enabled the monitoring of this child's bilingual acquisition until 16 1/2 months of age. The focus throughout was upon sociolinguistic features based upon a 'functional component hypothesis' of language acquisition.

The results of this study support this functional view of language acquisition, specifically Halliday's (1975) Phase 1 and beginning of Phase 2. Whether, in bilingual sense the results continue to verify Halliday's theory of language acquisition, will be subject to further investigation and research.

At 16 1/2 months, language is identifiable as a two level system, one level of functional meaning (morphemic and relational), the other involving expressions (phonological). The development of this child's linguistic system is seen to be arbitrary in that the oral expressions or signs produced, although conveying meaning, were not initially represented in the meanings. Linguistic conventionality was evident. That is, Zoe's words and intonation features were characteristic of the adult linguistic mileu which surrounded
The bilingual role of the parents, though different, has resulted in little or no observable confusion, although the importance of linguistic re-inforcement has been identified. No formal linguistic teaching has been required, the child being allowed to develop naturally (as in any monolingual situation). The communicative situation has not been unduly affected by its bilingual nature. In fact both parents have benefited - the mother through more constant use of everyday Spanish and the father through his developing knowledge of the Spanish language, and through his endeavours at maintaining this Spanish relationship outside the home.

The importance of non-verbal behaviours and the invaluable use of video in recording contextual influences upon linguistic development have been noted. More importantly, in the process of acquiring two languages, it can be stated that the responsibility for language development and production, remained totally in the control of the child. In addition, this research provided support for the 'developmental learning model' proposed by Holdaway (1979). The following general characteristics of which are seen to apply to the acquisition of spoken language in this study's context.

*The learning begins with immersion in an environment in which the skill is being used in purposeful ways. Readiness is timed by the internal 'clock' of the learner.*

*The environment is an emulative rather than an instructional one, providing lively examples of the skill in action, and inducing targeting activity which is persistently shaped by modelling and by reinforcement.*
Reinforcement contingencies, both intrinsic and extrinsic, approach the ideal of immediate rewards for almost every approximation regardless of the distance of the initial response from the perfect 'correct' response.

Bad approximations - those moving away from the desired response - are not reinforced.

What aspect of the task will be practised, at what pace, and for how long is determined largely by the learner. Practice occurs whether or not the adult is attending, and tends to continue until essential aspects of the task are under comfortable, automatic control.

The environment is secure and supportive, providing help on call and being absolutely free from any threat associated with the learning of the task.

Development tends to proceed continuously in an orderly sequence marked by considerable differences from individual to individual.

Holdaway (1979, pp. 23)

A feature of this study was the irregular development of language, some words gradually appearing from linguistic approximations over time, while others appearing in the context of personal, interactive interest.

It was noted (Section 4.8.1, page 82) that as the protolanguage took on characteristics of both the mother's tongue and father's tongue, a mixing of expressions occurred. That is, several expressions were often phonemically similar in both languages: [bA] - baño, [bA] - bath. These phonemic similarities raise a question regarding 'phonemic tolerance'. How much 'phonemic tolerance' is accepted by the child before each expression
becomes a different entity? In Zoe's case this could not be fully determined in the short term and remains an issue to be explored in future study.

5.4.1 Suggestions - Further Research

If we are to provide confirmation of the 'functional components hypothesis' as it relates to this study, this study will need to continue into a stage where 'Zoe' has control over the linguistic conventions of both languages.

This follow up research will also provide more detailed information concerning the development of bilingualism and in particular Spanish lexical items which this research could not provide.

The research initiates further questions which need exploring.

. How does this bilingual child use her languages?

. In what situations does she switch from one language to another?

. What influences this language switching?

. When does she become conscious of her bilinguality?

. What influence does her developing bilingualism have on reading and writing development...?

. What are the long term effects of simultaneous bilingual development on the family...?

. Could learning to control the written forms and registers of one's native language be similar to learning the oral form of second language acquisition?

. Will the use of more sophisticated technology assist in the identifying of linguistic expressions?
5.5 Concluding Remarks

In conclusion then, what is not known about language acquisition, particularly bilingual acquisition, far exceeds what is known. It is known, however, that this child is developing as a bilingual language user. This study has identified the beginnings of this development and provided some knowledge of what she brings to the task of developing 'communicative competence' (Lindfors, 1987), the influence of the people who surround her and how she participates in communicative events within her social context.

It is hoped that the results of this study and the evidence from other studies referred to within the study will assist as Saunders (1983) states in "removing some of the mystery and doubts about bilingualism" Saunders (p.245) and perhaps stimulate other into the challenging, yet most illuminative, world of child language study.
REFERENCES


APPENDIX A

SAMPLE OF FIELDNOTE/JOURNAL FORMAT
<table>
<thead>
<tr>
<th>Date</th>
<th>Expression</th>
<th>Contextual Notes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 14</td>
<td>eee (i:) high pitched squeal</td>
<td>Pete was opening his birthday presents with Zoe's help. As he undid the wrapping and tossed it aside, Zoe said eee (i:) and looked after it. Pete responded: Do you want the paper?</td>
<td>Zoe wanted the paper - her eyes looked directly at it as she said it</td>
</tr>
<tr>
<td>Nov. 14</td>
<td>??</td>
<td>Zoe kept rambling on and on as if playing with sounds. No obvious person or objects were involved.</td>
<td>Couldn't understand what she was saying - long expressions flowing into one another</td>
</tr>
<tr>
<td>Nov. 14</td>
<td>u (mid tone) (ɔː)</td>
<td>When her nana and pa walked in Zoe looked straight at them, said (ɔː) and smiled.</td>
<td>Zoe recognised them</td>
</tr>
<tr>
<td>Nov. 14</td>
<td>umbardu...</td>
<td>Lying on her back, hitting her toy car</td>
<td>I'm fixing it? I like the noise?</td>
</tr>
<tr>
<td>Nov. 16</td>
<td>'u' (əː)</td>
<td>Syl walked in on Zoe after being out shopping - looked up and smiled as she said it (Rpt x 2). Syl picked her up</td>
<td>It's you mum? Pick me up?</td>
</tr>
</tbody>
</table>
APPENDIX B

TABLE OF THE INTERNATIONAL PHONETIC ALPHABET
(I.P.A.)
**THE INTERNATIONAL PHONETIC ALPHABET (Revised to 1979)**

<table>
<thead>
<tr>
<th>Articulator</th>
<th>Palatal-alveolar</th>
<th>Post-alveolar</th>
<th>Retruded</th>
<th>Alveolar, palatal, velar</th>
<th>Similar</th>
<th>Labial</th>
<th>Labial-Pharyngeal</th>
<th>Pharyngeal</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td></td>
<td>p</td>
<td>e</td>
<td>t</td>
<td></td>
<td></td>
<td>s</td>
</tr>
<tr>
<td>Planar</td>
<td>p</td>
<td>b</td>
<td>d</td>
<td>t</td>
<td>i</td>
<td>k</td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td>(Medium) Frontals</td>
<td>f</td>
<td>b</td>
<td>p</td>
<td>s</td>
<td>o</td>
<td>h</td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td>(Medium) Appr.</td>
<td>x</td>
<td>j</td>
<td>l</td>
<td>w</td>
<td>i</td>
<td>w</td>
<td></td>
<td></td>
<td>h</td>
</tr>
<tr>
<td>Lateral Fric.</td>
<td>w</td>
<td>k</td>
<td>x</td>
<td>s</td>
<td>e</td>
<td>e</td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td>Lateral Appr.</td>
<td>t</td>
<td>j</td>
<td>l</td>
<td>s</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td>Trill</td>
<td>r</td>
<td>f</td>
<td>s</td>
<td>s</td>
<td>t</td>
<td>t</td>
<td></td>
<td></td>
<td>t</td>
</tr>
<tr>
<td>Tongue Flap</td>
<td>r</td>
<td>f</td>
<td>s</td>
<td>s</td>
<td>t</td>
<td>t</td>
<td></td>
<td></td>
<td>t</td>
</tr>
<tr>
<td>lateral Fric.</td>
<td>t</td>
<td>j</td>
<td>l</td>
<td>s</td>
<td>e</td>
<td>e</td>
<td></td>
<td></td>
<td>e</td>
</tr>
<tr>
<td>Laterals Click</td>
<td>k</td>
<td>j</td>
<td>l</td>
<td>s</td>
<td>e</td>
<td>e</td>
<td></td>
<td></td>
<td>e</td>
</tr>
<tr>
<td>lateral Click</td>
<td>k</td>
<td>j</td>
<td>l</td>
<td>s</td>
<td>e</td>
<td>e</td>
<td></td>
<td></td>
<td>e</td>
</tr>
<tr>
<td>DIACRITICS</td>
<td>Voiceless n/d</td>
<td>Voice n</td>
<td>Aspirated t</td>
<td>Breath-rounded s, a</td>
<td>Breath-rounded s, a</td>
<td>Breath-rounded s, a</td>
<td>Breath-rounded s, a</td>
<td>Breath-rounded s, a</td>
<td>Breath-rounded s, a</td>
</tr>
<tr>
<td>OTHER SYMBOLS</td>
<td>Front</td>
<td>Back</td>
<td>TOWELS</td>
<td>Front</td>
<td>Back</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress, Tone (PIT)</td>
<td>stress, placed at beginning of stressed syllable, secondary stress; level pitch, high tone, low level; high rise, low falling; tone-rise.</td>
<td>Affricates can be written as digraphs, e.g. [tʃ], [tʃ], or with slur marks: thus [tʃ], [tʃ], or [tʃ]. Languages such as French may occasionally use the digraph [lj].</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

TABLE OF PRONUNCIATION RULES APPLIED
The symbols used in the pronunciation transcriptions are those of the International Phonetic Alphabet. The following consonant symbols have their usual English values: b, d, f, h, k, l, m, n, p, r, s, t, v, w, z. The remaining symbols and their interpretations are listed in the tables below.

### English Sounds

<table>
<thead>
<tr>
<th>Sound Description</th>
<th>Phonetic Symbol(s)</th>
<th>Example Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>as in father</td>
<td>'fæðə</td>
<td>bar, car, ear, far, star, tar, war</td>
</tr>
<tr>
<td>as in arm</td>
<td>'a:m</td>
<td>arm, farm, lamp, tram</td>
</tr>
<tr>
<td>as in as</td>
<td>a:z</td>
<td>fast, past, task</td>
</tr>
<tr>
<td>as in buzz</td>
<td>'bʌz</td>
<td>buzz, junk, skull</td>
</tr>
<tr>
<td>as in Hugh</td>
<td>hju:</td>
<td>Hugh, through</td>
</tr>
<tr>
<td>as in huge</td>
<td>'hju:</td>
<td>huge, through</td>
</tr>
</tbody>
</table>

### Foreign Sounds

- **French**: bon (bɔ̃), buisson (bu:son), clair (klaʁ), coin (kwã̯), rue (ru).
- **German**: Mann (maːn), Pasta (ˈpasta), schön (ˈʃœn).
- **Italian**: ch (k), gnocchi (ˈɡnɔtʃi), prata (pràta).

### Length

The symbol : denotes length and is shown together with certain vowel symbols when the vowels are typically long.

APPENDIX D

SAMPLE OF TRANSCRIPT RECORDED BY VIDEO -

16 1/2 MONTHS
Numbers represent video counter display at time of utterance.
Horizontal lines represent changes in communicative events.

M - Mother
F - Father

In addition, each communicative act and contextual features were colour coded.

16 1/2 (2)

<table>
<thead>
<tr>
<th>Time</th>
<th>To Whom</th>
<th>Expression</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1051-1054</td>
<td>To M</td>
<td>Rpt 1046</td>
<td></td>
</tr>
<tr>
<td>1064</td>
<td>To F</td>
<td>Pointing to doorway</td>
<td>ba:</td>
</tr>
<tr>
<td>1070-1071</td>
<td>To M/D</td>
<td>Rpt 1064</td>
<td></td>
</tr>
<tr>
<td>1080</td>
<td>To M</td>
<td>Looking at M</td>
<td>Lvk ba:</td>
</tr>
<tr>
<td>1126</td>
<td>To F</td>
<td>Handling a strap, pulling</td>
<td>Lvk:</td>
</tr>
<tr>
<td>1156</td>
<td>To F</td>
<td>Looking in video/case</td>
<td>d∧d∧, Js</td>
</tr>
<tr>
<td>1222</td>
<td>To F</td>
<td>Answering his question</td>
<td>naυ</td>
</tr>
<tr>
<td>1246</td>
<td>To F</td>
<td>Holding out her hand</td>
<td>Lvk</td>
</tr>
<tr>
<td>1298</td>
<td>To F</td>
<td>Pointing to pyjamas</td>
<td>tɛd̃l</td>
</tr>
</tbody>
</table>