

PDF hosted at the Radboud Repository of the Radboud University Nijmegen

The following full text is a publisher's version.

For additional information about this publication click this link.

<http://hdl.handle.net/2066/145784>

Please be advised that this information was generated on 2017-12-05 and may be subject to change.

**THE ACQUISITION OF
REFERRING EXPRESSIONS
BY YOUNG CHINESE CHILDREN**

**A Longitudinal Study of the Forms and Functions
of Early Noun Phrases**



Rui-Fang Min

THE ACQUISITION OF REFERRING EXPRESSIONS BY YOUNG CHINESE CHILDREN

**A Longitudinal Study of the Forms and Functions
of Early Noun Phrases**

**NIJMEGEN
1994**

Layout/typesetting
Copyright

Rui-Fang Min

© 1994 Rui-Fang Min

No part of this book may be reproduced in any form, by print, photoprint, microfilm or any other means, without prior written permission from the author.

Niets uit deze uitgave mag worden verveelvuldigd en/of openbaar gemaakt, door middel van druk, fotokopie, microfilm of welke andere wijze ook, zonder voorafgaande schriftelijke toestemming van de auteur.

CIP-DATA KONINKLIJKE BIBLIOTHEEK, DEN HAAG

Min, Rui-Fang

The acquisition of referring expressions by young Chinese children: a longitudinal study of the forms and functions of early noun phrases / Rui-Fang Min. - [S.l.: s.n.]. - Fig., tab.

Thesis Nijmegen. - With ref. - With summary in Dutch.

ISBN 90-9007113-X

Subject headings: language acquisition ; Chinese children / referring expressions ; Mandarin Chinese.

The Acquisition of Referring Expressions by Young Chinese Children

**A longitudinal study of the forms and functions
of early noun phrases**

*een wetenschappelijke proeve
op het gebied van de Sociale Wetenschappen*

PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Katholieke Universiteit Nijmegen,
volgens besluit van het College van Decanen
in het openbaar te verdedigen op
maandag 30 mei 1994
des namiddags te 1.30 uur precies

door

RUI-FANG MIN

geboren te Zhejiang (P.R.China)

Promotores: Prof. Dr. F.J. Mönks
Prof. Dr. W. Klein (Max-Planck-Institut für Psycholinguistik,
Nijmegen)

Co-promotor: Dr. M. Hickmann (Université René Descartes, Paris.
Centre National de la Recherche
Scientifique)

The research reported in this thesis was supported by a Ph.D. stipend from *the Max-Planck-Gesellschaft zur Förderung der Wissenschaften*, München.

The writing of the thesis was also supported by *the Stichting Centrum voor Begaafdheidsonderzoek (CBO)*, Nijmegen.

ISBN 90-9007113-X

Table of Contents

Table of Tables and Figures	9
Acknowledgements	11
Abbreviations used in the tables, the texts, and in the coded files	12
Conventions used in the transcriptions	14
Introduction	15
1 The Semantics and Pragmatics of Reference	17
1.0 Introduction	17
1.1 Specific versus nonspecific reference	18
1.2 Given versus new information	19
1.3 First versus subsequent mentions	21
1.4 Exophora versus Endophora	22
1.5 The accessibility of referents	23
1.6 Summary	24
2 Formal Encoding of Reference in Mandarin Chinese	25
2.0 Introduction	25
2.1 Chinese noun phrase types	25
2.2 Formal encoding of nonspecific versus specific reference by means of noun phrase types	27
2.3 Formal encoding of given versus new information by means of noun phrase types	29
2.4 Formal encoding of given versus new information by means of word order	30
2.5 Noun phrase types, word order and discourse	32
2.6 Summary	33
3 Previous Studies on the Acquisition of Referring Expressions	34
3.1 The acquisition of referring expressions: an overview	34
3.2 The acquisition of the semantics of referential devices	35
3.2.1 Brown's longitudinal study	35
3.2.2 Experimental studies	35
3.3 The acquisition of the pragmatic functions of referential devices ..	39
3.3.1 Longitudinal and observational research and prelinguistic referring devices	40
3.3.2 Experimental research of linguistic devices for given	

	versus new information	44
3.4	The acquisition of the anaphoric function of pronominals in discourse	49
	3.4.1 Studies of Indo-European languages	50
	3.4.2 A study of non-Indo-European languages	51
	3.4.3 A cross-linguistic study	52
3.5	The acquisition of reference from a universal perspective	54
3.6	Summary	55
4	Aim of the Present Study and Methods	57
4.0	Introduction	57
4.1	Methods	58
4.2	Subjects	58
	4.2.1 Mengmeng (MM)	59
	4.2.2 Dandan (DD)	60
	4.2.3 Jiajia (JJ)	61
	4.2.4 Duanlian (DL)	62
	4.2.5 Maliang (ML)	63
4.3	Analysis methods	64
	4.3.1 Formatting	64
	4.3.2 Coding	65
	4.3.3 Analysis	69
	4.3.4 An example	70
5	Children's Marking of Specific versus Nonspecific Reference	72
5.0	Introduction	72
5.1	Forms of referring expressions	72
5.2	Children's marking of nonspecific versus specific reference	77
	5.2.1 Referring expressions used for nonspecific reference	83
	5.2.2 Referring expressions used for specific reference	90
5.3	Summary	93
5.4	Conclusion	94
6	Learning to Introduce Referents	96
6.0	Introduction	96
6.1	Introducing referents by means of noun phrase position in relation to the verb	96
	6.1.1 Introducing referents by labelling, preverbal position and postverbal position	96
	6.1.2 Using semantic notions to construct discourse at early phases	99
	6.1.3 The acquisition of the existential presentative constructions and their functions	103

6.1.4	Summary	104
6.2	Referent introductions and forms	104
6.2.1	The One-word Stage	107
6.2.2	The Deictic Stage	122
6.2.3	The Transitional Stage	132
6.2.4	Summary	137
6.3	Conclusion	138
7	Learning to Maintain Reference	141
7.0	Introduction	141
7.1	Reference maintenance and forms	142
7.2	Forms for reference maintenance and their positions in relation to verbs	148
7.3	Forms used in coreferential versus non-coreferential contexts	153
7.4	The nature of children's noun phrases for reference maintenance: Are they used anaphorically?	155
7.4.1	Cohesive devices at early stages	156
7.4.2	Cohesive devices at later stages	160
7.5	Conclusion	166
8	Summary and Conclusions	168
	References	175
	Samenvatting	183
	Appendix I Longitudinal Database of Five Mandarin-Speaking Children	186
	Data of Dandan	186
	Data of Mengmeng	187
	Data of Maliang	188
	Data of Jiajia	189
	Data of Duanlian	190
	Appendix II Stories Produced by the Children	191
	Story One: A Bear and Two Children	191
	Story Two: A Seven Color Flower	194
	Story Three: A Mother Rabbit and Her Three Babies	197
	Appendix III Examples of Data	200
	Dandan	200
	Mengmeng	203
	Maliang	205

Jiajia	207
Duanlian	211

Curriculum Vitae

Table of Tables and Figures

Chapter 3

Table 3.1	Types of NPs in Cantonese and their possibility to denote given and new referents (Szeto (1993:4))	43
Figure 3.1	Functions of article forms elicited in Garton's (1984:89) experiments	37

Chapter 4

Table 4.1	The ages of the five children in this study	59
Table 4.2MM	Age, Size, MLU, and SD for each of Mengmeng's Sessions	60
Table 4.2DD	Age, Size, MLU, and SD for each of Dandan's Sessions	61
Table 4.2JJ	Age, Size, MLU, and SD for each of Jijia's Sessions	62
Table 4.2DL	Age, Size, MLU, and SD for each of Duanlian's Sessions	63
Table 4.2ML	Age, Size, MLU, and SD for each of Maliang's Sessions	64
Table 4.3	Age phases and number of sessions in each across all subjects	70

Chapter 5

Table 5.1a	Forms of referring expressions in each of Mengmeng's (MM) sessions	74
Table 5.1b	Forms of referring expressions in each of Dandan's (DD), Maliang's (ML), Jijia's (JJ), and Duanlian's (DL) sessions	75
Table 5.2	Overall frequencies of all referring expressions used for specific reference, nonspecific reference, and other-reference for five children	78
Table 5.3a	Forms of referring expressions used for nonspecific reference	80
Table 5.3b	Forms of referring expressions used for specific reference	81
Table 5.3c	Forms of referring expressions used for the other-reference group	82
Table 5.4	Referring expressions used for nonspecific versus specific reference	94

Chapter 6

Table 6.1	Proportions of new referents introduced with postverbal position	99
-----------	--	----

Table 6.2	Absolute frequencies of referent introductions in existential presentative constructions	104
Table 6.3a	Distribution of different types of noun phrases for referent introductions in each of Mengmeng's (MM) age phases	105
Table 6.3b	Distribution of different types of noun phrases for referent introductions in each of Dandan's (DD), Maliang's (ML), Jiajia's (JJ) and Duanlian's (DL) age phases	106
Table 6.4	Proportion of new referents introduced by means of nominals with numeral determiners and classifiers (num-cl-N)	138
Figure 6.1	Proportions of first mentions of referents with verbless labelling (PRED), with preverbal position (PREV), and with postverbal position (PSTV) in five children	98
Figure 6.2	Proportions of animate referents introduced with verbless labellings (PRED), with preverbal position (PREV), and with postverbal position (PSTV) in five children	101
Figure 6.3	Proportions of nominals with numeral determiners and classifiers used for nonspecific (RNSPE), specific new (RNEW), and specific given (RMUK) reference in five children	134

Chapter 7

Table 7.1	Distribution of different types of noun phrases used for reference maintenance in each of Mengmeng's (MM), Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases . . .	143
Table 7.2a	Proportions of nominals, third person pronouns, deictic pronouns, and zero forms used for first and subsequent mentions in each of Mengmeng's (MM) age phases	145
Table 7.2b	Proportions of nominals, third person pronouns, deictic pronouns, and zero forms used for first and subsequent mentions in each of Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases	146
Table 7.3a	Positions of referring expressions used for subsequent mentions in each of Mengmeng's (MM) age phases	151
Table 7.3b	Positions of referring expressions used for subsequent mentions in each of Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases	152
Table 7.4	Referring expressions in coreferential and non-coreferential contexts in each of Mengmeng's (MM), Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases . . .	155

Acknowledgements

This thesis would not have been possible without the help of many people and institutions. First of all, I would like to thank Wolfgang KLEIN from the Max Planck Institute for Psycholinguistics and Zheng-Yuan XU from Peking University for their support in obtaining a stipend which enabled me to carry out the research reported in this thesis.

I have had a fruitful and enjoyable time in Nijmegen thanks to everyone's kindness at the Max Planck Institute, which provided me with intellectual stimulation, a congenial working environment, and assistance in every imaginable way. I am grateful to Maya HICKMANN for her advice and invaluable comments on various versions of this thesis. I have benefitted from numerous constructive suggestions and helpful comments of Wolfgang KLEIN. I thank Franz J. MÖNKS for his dedicated support and helpful contribution to the completion of the thesis. I thank James C.P. LIANG of Leiden University for many helpful discussions on the earlier versions of this thesis and for his continuous interest in this research. I would like to thank Henriëtte HENDRIKS for her comments on earlier versions of this thesis, as well as for translating the summary in Dutch. I am grateful to Werner DEUTSCH from the Technical University of Braunschweig, Michael KATZKO from the Catholic University of UNIKA, and to Ding XU of Leiden University for their helpful comments. Yu-Qing WANG transcribed some of the data and checked my transcriptions. Jun-Qing ZHANG checked the Pinyin. Susan POWERS lent her native eyes to the English. I am also grateful to the members of the Child Psychology Laboratory of Peking University for their help in copying the tapes and transcriptions, and for sending them to me in Nijmegen. I thank the members of the Center for the Study of Giftedness for their kind support in the completion of the thesis. I thank my fellow PhD-students, friends, as well as the Welcome Committee of the Catholic University of Nijmegen, who made life in Nijmegen enjoyable. I would like to thank all the lively children and their families who participated so enthusiastically in this longitudinal study. I am grateful to my parents Yang-Yuan MIN and Fu-Bao WANG from our home town in eastern China for their encouragement and warmest support. Special thanks go to my husband, Fang ZHOU, for his wholehearted support and for lending me his knowledge of programming.

Needless to say, I am alone responsible for all the imperfections that inevitably still remain in this thesis.

Abbreviations used in the tables, the texts, and in the coded files

Abbreviations	Term
---------------	------

(1) Noun phrases

NP	noun phrase
bare-N or NOM ¹	bare nominals
other-N or OTHERNOM	other nominals (see definition in Chapter 7)
d-PRO or DEM	demonstrative pronouns
dem-cl-N or DEMCLNOM	nominals with demonstrative determiners and classifiers
KIN	kinship terms without determiners
num-cl-N or NUMCLNOM	nominals with numeral determiners and classifiers
pos-N or POSNOM	nominals with possessives
p-PRO or PRO3	third person pronoun
ZERO	zero form

(2) Names

ADU	Adults other than mother, grandmother, father, and experimenter
DD	Child, <u>D</u> andan
DL	Child, <u>D</u> uanlian
EXP	Experimenter
FAT	Father
GMO	Grandmother
JJ	Child, <u>J</u> jajia
ML	Child, <u>M</u> aliang,
MM	Child, <u>M</u> engmeng
MOT	Mother

(3) Others

BA	<i>bǎ</i>
BEI	<i>bèi</i>
CL	classifier
DE	<i>de</i>

¹ When two alternative abbreviations are given, the one in small letters (e.g., num-cl-N) is used in the tables and in the text, while the one in capital letters (e.g., NUMCLNOM) is used in the coded files.

LE	aspect particle
MLU	mean length of utterance
PATL	particles other than LE and question particles
PLU	plural marking (- <i>men</i> , - <i>xie</i>)
SD	standard deviation
Q	question particle (<i>ma</i>), sometimes in combination with rising intonation (e.g., <i>a?</i> , <i>ya?</i> , and <i>ne?</i>)
1p	first person singular pronoun (<i>wǒ</i>)
2p	second person singular pronoun (<i>nǐ</i>)
3p	third person singular pronoun (<i>tā</i>)
∅	zero form (in transcription and in morpheme translation except for imperatives indicated by "!" in free translation)
*CHI or CHI	main tier line for children's utterances
%men	morphemic translation in English
%eng	free translation in English
%rf	dependent tier lines for referring expressions in the unit (e.g., %rf1 for the first or the only one, %rf2 for the second, etc.)
%sit	information about aspects of the situation
%com	commentary on the part of the coder
%act	nonverbal action

Conventions used in the transcriptions¹

Code	Function
[?]	best guess
()	noncompletion of a word
#	short pause
##	long pause
[!]	contractive stress on previous word
[= text]	explanation to the situation
[: word]	correct pronunciation
[*]	error
.	period
!	exclamation
?	question mark
-.	falling contour
-ˀ.	rising contour
-:	lengthening or drawing of the previous word
+...	noncompletion
+/.	interruption
+^	quick uptake
[/]	repetition
[//]	repair
//	emphasis on the subsequent word
[>] and [<]	overlap of utterances or parts of utterances
[=! text]	paralinguistic material
@b	babbling
@i	interjection, interactional words
@o	onomatopoeic
@c	child form
∅	zero form

¹ The conventions listed here are adopted from CHAT (MacWhinney, 1991)

Introduction

Language forms cannot be separated from all the uses to which they can be put. Among all their uses, perhaps the most important and basic one is to refer to entities or *referents*. A referent can be an object, a person, or an abstract notion. It may be specific to the speaker (e.g., *his dictionary*) or nonspecific (e.g., *dictionaries* in general). A speaker may talk to his addressee about a *given* referent, which his addressee knows, e.g., *the City Hall*, or a *new* referent, which his addressee does not know, e.g., *a guest*. He may talk about a referent in the immediately non-linguistic context, e.g., *this cup*, or a remote referent, e.g., *a museum in Amsterdam*, and so on.

Previous studies suggest that the concept of reference requires a distinction between *specific* and *nonspecific*. Specific reference involves a further distinction between *given* and *new* information. These distinctions are shared across languages including Indo-European languages as well as other languages such as Chinese. However, languages differ in the way in which they express these distinctions, for example, by means of devices such as (definite and indefinite) articles versus word order. Recently, much research has witnessed a growing interest, both theoretical and empirical, in the question of how the referential system is acquired. More specifically, it has focussed on how children acquire the particular means necessary to encode referential distinctions in their language, namely, the acquisition of the forms, meanings, and the uses of referring expressions. This research is centered around two major lines of discussion. First, studies of the acquisition of reference (Brown, 1973; Clancy, 1992; Garton, 1984; Hickmann, 1982, 1991a, 1992; Karmiloff-Smith, 1979; Maratsos, 1974, 1976, Szeto, 1993; Warden, 1976, 1981) have led to divergent conclusions with respect to when children acquire the linguistic ability to refer. Second, the only crosslinguistic work on this competence was a review done in the framework of Bickerton's Language Bioprogram Hypothesis (Czito, 1986). This work tested the hypothesis that children are universally sensitive to the specific versus nonspecific distinction on the basis of the evidence from only English and French.

The aim of this thesis is to contribute to our understanding of the acquisition of reference by investigating Mandarin Chinese child language. It is structured as follows. Chapter 1 introduces various distinctions (specific versus nonspecific reference, given versus new information, and so on) and lays out the linguistic framework I will use.

Chapter 2 discusses how these notions are encoded with linguistic forms, with special reference to Mandarin Chinese. Chapter 3 reviews relevant studies of the acquisition of reference in various languages. Chapter 4 introduces the aim and method of this study, and shows how information about the acquisition of Mandarin Chinese could help us to better understand the acquisition process. Chapters 5 to 7 analyze how young Chinese children mark specific and nonspecific reference, how they learn to introduce referents, and the devices they use to maintain reference to the introduced entities in discourse. Finally, Chapter 8 sums up the findings and draws conclusions based on the data.

1 The Semantics and Pragmatics of Reference

1.0 Introduction

This study deals with the ways in which children learn to refer to entities (e.g. objects and persons). Such entities will be called *referents* and the common device to introduce referents into the discourse, or to maintain reference to them are *noun phrases* (hereafter, NPs). All languages have different types of NPs, such as

- lexical noun phrases, e.g., *the old man, a proper theory, this little car, four important notions*;
- proper names, e.g., *John, Zhangsan, King George, Fido*;
- personal pronouns, e.g., *you, she, them, tā*;
- empty elements, e.g., the implicit subject in Latin *amamus Petrum* or Chinese zero forms;
- and others such as more abstract notions, e.g., *knowledge, sincerity*.

They differ not only in their form from language to language, but also in their precise function. Intuitively, a personal pronoun or an empty element presupposes more contextual knowledge on the part of the speaker than a lexical noun phrase. Moreover, NPs can occur in different positions within the sentence, and this, too, influences the way in which they refer. Although the basic types of NPs are found in all languages, their precise form and function, as well as the nature of their interaction with the remainder of the sentence, are subject to many variations. Children have to learn not only the basic semantic and pragmatic distinctions, but also the forms which encode these distinctions in their particular language.

Reference, in the very broad sense in which this word is used here¹, has been the subject of intensive research in linguistics, philosophy and psychology. This work has led to a wealth of empirical findings, theories, and terminological systems. In the present context, it is neither possible nor desirable to review this work in any detail (for

¹ Some authors use this term in a very specific sense (roughly the meaning of a proper name, or a definite noun phrase such as *the king of France*). What we have in mind here, is its broad range, in the sense explained above.

recent surveys, see - among many others, Hawkins 1977, 1978a, 1978b; Heim, 1982). In this chapter, we shall outline some basic distinctions, notably the distinction between *specific* and *nonspecific* reference, and between *given* and *new* specific information. Each language has these distinctions, although the way in which they are marked varies from language to language. This presentation is not intended to provide any new view on these phenomena. It is simply intended to set the frame of analysis for the following empirical investigation.

1.1 Specific versus nonspecific reference

Reference is said to be specific versus nonspecific depending on whether or not the speaker intends to refer to particular individuals. *Specific* reference is involved when the speaker refers to particular individuals, which are distinct from all other members of their class or of a group. The use of definite expressions, including pronouns or the definite article *the* in English, typically signals reference to a particular individual of the class (and not just an instance of that class or of a group). For example, when a son says to his father "may I use *the car*?" *the car* typically refers to the family car.

In contrast, *nonspecific* reference is involved when there is no reference to particular individuals. In other words, the speaker has no particular individuals of the class or of a given setting of entities in mind. For example, consider the English sentence in (1) uttered in a context where the speaker has planned to buy both a camera and a CD-player when he gets money.

- (1) I don't know if I should spend the money for a CD-player first or for a camera.

At the moment of speaking, he has money only to pay for either a CD-player or a camera, but not both, and he has not yet decided which one to buy first. The indefinite article *a* signals that the speaker has no particular individual of the class *CD-player* or *camera* in mind.

There are also situations in which people refer to non-particular entities. For example, consider a situation where a host is serving fruit consisting of apples, bananas, and pears to his guests, and asks:

- (2) What do you prefer: apples, bananas, or pears?

If the guest then answers:

- (3) I'd like an apple.

an apple is used to refer to a non-particular apple among the fruit . If a guest wants to have a particular apple, he has to indicate the intended apple by using definite NPs with a discriminate modifier verbally, e.g., *I'd like the green one on the top*, or nonverbally, e.g., *I'd like this apple* (pointing to the apple).

Finally, other cases such as shown in (4) *the cat* or *cats* do not have a particular referent. The NP does not necessarily pick out a particular individual in the class, but rather refers generically to all members of the class *cat*.

- (4) The cat is a friendly animal.
Cats are friendly animals.

Thus, differences exist between the three situations described above. In example (1) *a CD-player* and *a camera* refers to non-particular members of the class. In examples (2) and (3) *apples* and *an apple* refer to non-particular members or a non-particular member of the given set. In contrast, in example (4) *the cat* or *cats* are used to refer generically to all cats. Reference, such as shown in (3), that may be instantiated with actual entities (in the immediate future). This is a special case among nonspecific reference, and is termed as *nonspecific-potential reference* (cf. Karmiloff-Smith, 1981).

1.2 Given versus new information

Whether reference is specific or nonspecific depends on the speaker's intention. In a real discourse situation, the speaker speaks to his addressee(s), and in a written context the addressee is the reader. In either case, the speaker has to take into account the addressee's knowledge about the intended specific referent, which may be *given* or *new* to him.

Previous work in linguistics and psycholinguistics provides various ways of characterizing given versus new information (cf. Bates & MacWhinney, 1978; Chafe, 1976; Clark & Clark, 1977; Haviland & Clark, 1974; MacWhinney, 1977). Both given versus new and definiteness versus indefiniteness have been used when talking about the status of information. In addition, definiteness and indefiniteness have also been used to describe the nature of linguistic forms. In this study, we will use *given* and *new* when speaking about information and *definite* and *indefinite* when speaking about forms.

Haviland and Clark (1974) define the contrast between given and new as shown in (5).

- (5) *Given* (or old) information is what the listener is expected to know already by the speaker.

New information is what the listener is not expected to know already by the speaker.

(Haviland & Clark, 1974:512)

Following their definition, the contrast between *given* and *new* is made depending on the speaker's assumption about the addressee's knowledge about the referent, i.e., whether or not particular referents denoted by the speaker can be identified by the addressee when he hears the utterance. In other words, *given* information is involved when the speaker refers to particular entities whose existence and identity can be established by the addressee at the moment of speaking, while *new* information is involved when the speaker refers to particular entities which cannot be identified by the addressee at the moment of speaking. In other words, the speaker brings new information to his addressee.

More generally, a number of writings have pointed out that language use is inherently dependent on the knowledge which speakers have about the reality they are representing in their utterances and on the knowledge they assume to be shared by their interlocutors about this reality. Thus Olson (1970) argues that language use "is based on cognition, the knowledge of the intended referent, not [only] on the rules internal to language" (1970:259) and that referring always involves "indicating the referent relative to a set of alternatives" (1970:264). More generally he states that

Words (or utterances) neither symbolize, stand for, nor represent referents, objects, or events. They serve rather to differentiate some perceived event from some set of alternatives (1970:265).

Similarly, in studying referential forms (for details see Chapter 2), many researchers have observed that definite forms can be used to denote entities, even when these entities have not yet been previously mentioned in the discourse. To the nature of definite (or given) reference, Du Bois (1980) pointed out that

To make a definite reference to an object, it is not necessary for there to be in previous discourse a reference to the object; it is only necessary for the idea of the object to have been evoked in some way (Du Bois, 1980:215).

Thus, referents can be given because of their uniqueness, e.g., *the moon* refers to the unique moon in the world. Givenness can also be decided by general and mutual knowledge that is shared culturally or by a society, as well as by extralinguistic context, i.e., information can be given through the physical presence of the object in the speech situation (*situational reference*). Referents can also be evoked by the previous discourse context. For example, in (6) *the clutch* has not been mentioned previously, but it is

understood to refer to the clutch of the car.

- (6) Last Saturday afternoon we went for picnic by car. Halfway there, the clutch broke.

The givenness of the clutch is triggered by the previous mention *car*. This kind of givenness has been called *associative reference*.

In contrast, new information is involved when a referent is mentioned for the first time and when its existence and identity cannot be determined in any of the above ways. In many languages new reference is often encoded by an indefinite NP. In example (7), the speaker presents new information about *a book about China* to the listener. The book about China cannot be identified by the listener at the moment of speaking. Thus, the speaker uses an indefinite NP (*a book about China*) to denote this new referent.

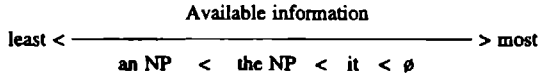
- (7) There is a book about China on the desk.

1.3 First versus subsequent mentions

The *first mention* of a referent refers to its first appearance in discourse, irrespective of its status (given or new). *Subsequent mentions* of this referent correspond to its later (subsequent) appearances in discourse.

A referent on first mention may be given or new, depending on whether or not the speaker assumes that listener shares knowledge about it at the moment of speaking. The first mention of a new referent is often expressed explicitly by an indefinite NP. In contrast, the first mention of a given referent is often introduced by NPs other than indefinite NPs (Halliday & Hasan, 1976; Haviland & Clark, 1974; Du Bois, 1980; Sun & Givón, 1986). For example, in Chinese indefinite NPs, i.e., nominals with numeral determiners and classifiers, can be used to denote new referents. The first mention of a given referent can be an NP other than an indefinite one, (e.g., indeterminate NPs, definite NPs, pronominals, and even zero forms) when the identity of the referent can be retrieved from non-linguistic context or mutual knowledge (Chao, 1968; Chen, 1984; Huang, 1984; Hickmann & Liang, 1990; Li & Thompson, 1976, 1979, 1981; Sun & Givón, 1886). The choice of one type of NP rather than another depends on the amount of available information concerning the denoted referent from linguistic as well as non-linguistic context. The relation between NP types and available information for a given referent are summarized in (8) below (also cf. Hickmann, in press):

(8)



On this continuum, the referring expression *an NP* is used to refer to referents with the least information available from non-linguistic and linguistic context, while the referring expression \emptyset is used to denote referents with most information available from both contexts.

1.4 Exophora versus Endophora

It has been shown that both non-linguistic and linguistic contexts play an important role in language use and acquisition. Two types of context-dependent terms, e.g., exophora versus endophora and deixis versus anaphora have been often defined in relating to these two types of contexts (Halliday & Hasan, 1976; Hickmann, 1982, 1987b, 1991a, in press; Lyons, 1977; Weissenborn & Klein, 1982). In all languages, both types of notions involve indexical devices that *point* to something in the context, non-linguistically or linguistically. The distinction between exophora and endophora depends on whether reference is made to entities in the non-linguistic context or in the linguistic context. "Exophoric uses typically point to and presuppose some parameter of the immediate non-linguistic situation, endophoric ones some discourse-internal aspect of the context" (Hickmann, in press).

Personal pronouns (e.g., *I, you, he*), demonstratives (e.g., *this, that*), nouns with demonstrative determiners (e.g., *this dog*), and other definite NPs (e.g., *the dog*) typically correspond to exophoric uses, since they frequently denote objects that are physically present in the context. In contrast, NPs which are coreferential with other NPs in the linguistic context correspond to endophoric uses in situations where the denoted entities are not available in the non-linguistic context.

As noted by Halliday and Hasan (1976), a *deictic* term signals "that reference must be made to the context of situation" (1976:33) and the referent of a deictic term must be "present in the context of situation" (1976:49). Halliday and Hasan emphasized that "present in the context of situation" does not necessarily mean "physically present in the context of situation", it merely means that reference can be identified in the context of the situation. According to this notion, in cases such as (9), where both the speaker and the addressee know that the person denoted by "he" was suggested to leave that day, "he" is used deictically, though the referent was not present in the immediately non-linguistic context, but in the shared knowledge of both the speaker and addressee.

(9) He left already.

An anaphoric term has been said to be "of presupposition, pointing BACK to some previous item" (Halliday & Hasan, 1976:14) and the presupposed element is in an early sentence. This definition runs into problems with sentences such as (10), quoted from Lyons (1977:667):

- (10) - That's a rhinoceros.
 - A what? Spell it for me.

Note that in (10) *it* points to the word *rhinoceros* in previous discourse, but not to the referent denoted by the word *rhinoceros*. In other words, *it* in (10) is not coreferential with the referent denoted by the term *rhinoceros*.

Lyons (1977) distinguishes anaphoric uses of referring expressions from uses such as example (10). Only noun phrases such as *it* shown in example (11), where *it* is coreferential with *a pair of shoes* in the preceding discourse, i.e., these two expressions refer to the same object (the pair of shoes bought yesterday), are anaphoric.

- (11) Yesterday I bought a pair of shoes. *It* is white.

Thus, a term is *anaphoric* when it is used to maintain reference to the referent referred to in the preceding linguistic context, particularly in cases where the interlocutors can rely only on linguistic context.

Both deictic and anaphoric uses of referring expressions are indexical. Many proposals relating anaphora to deixis have been made (cf. Ehlich, 1982; Jarvella & Klein, 1982; Fillmore, 1982; Levinson, 1983; Lyons, 1975, 1977). With respect to the relationship between deictic and anaphoric uses of referring expressions from a developmental view, the deictic component of anaphora is characterized as one of its basic components. It has been claimed that the anaphoric function of referring expressions is derived from their deictic function (Lyons, 1975:61). In other words, deixis is more basic than anaphora (cf. Hickmann, 1982, 1991a, in press; Jarvella & Klein, 1982; Karmiloff-Smith, 1979; Klein, 1990).

With respect to personal pronouns, they can be used deictically as well as anaphorically and again their deictic use is the most basic from a developmental point of view (Hickmann, 1982, 1991a; Karmiloff-Smith, 1979; Klein, 1990; Saito, 1980). However, the anaphoric function of third person pronouns is their primary (or typical) function, in comparison to their more secondary deictic function (Halliday & Hasan, 1976).

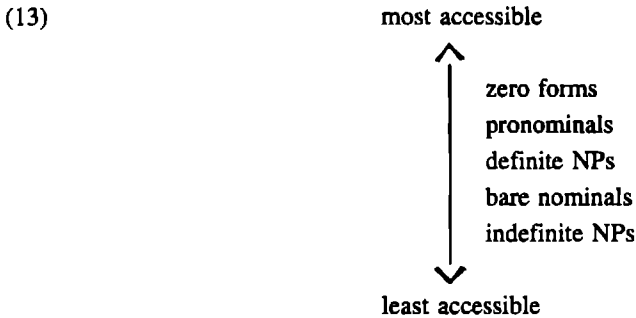
1.5 The accessibility of referents

Previous cross-linguistic and text-based studies have demonstrated that choosing one

type of form rather than another in discourse is affected by several factors (Chen, 1986; Fox, 1987a, 1987b; Givón, 1983, 1984; Pu, 1989; Tomlin, 1989). Among these factors, two are extremely sensitive, i.e., referential distance and the number of potential intervening referents.

- (12) a. **Referential distance:** the shorter the distance between the present mention of a referent and its last mention in the preceding discourse, the more accessible the referent is.
- b. **The number of potential intervening referents:** the smaller the number of other referents in the directly preceding discourse context that are semantically compatible with the predicate of a given referent, the most accessible this referent is.

Form is related to accessibility as follows: the more accessible a referent is, the more presupposing the form is (e.g., zero or pronoun) for the referent. In contrast, the less accessible the referent is, the fuller the NP is. The relation between referential forms and the accessibility of referents is shown in (13) below (recent surveys, see - among many others, Ariel, 1990; Silverstein, 1987).



1.6 Summary

To summarize this chapter, some basic notions concerning reference (i.e., specific versus nonspecific reference and given versus new information) and other discourse notions (i.e., first versus subsequent mentions, exophoria versus endophora, and the accessibility) and their interaction in discourse have been introduced. The goal of this chapter is to provide a framework I will use in the analysis of the data of this study.

2 Formal Encoding of Reference in Mandarin Chinese

2.0 Introduction

This chapter provides an introduction to the linguistic devices used to encode specific versus nonspecific reference, and given versus new information. Chinese employs NP types for distinguishing specific from nonspecific reference, and NP types as well as word order for distinguishing given from new information. We start with a description of Chinese NP types (2.1) and formal encodings of specific versus nonspecific and given versus new information by means of NP type (2.2 and 2.3). Then, language-specific devices to encode given versus new information by means of word order (or clause structures) will be introduced (2.4). Finally, the interaction of these two devices (i.e., NP types and word order) in discourse will be discussed (2.5). A summary will be given at the end of the chapter (2.6).

2.1 Chinese noun phrase types

Like other languages such as English, Chinese has the concepts of specific versus nonspecific reference, given versus new information, natural genders, and singularity versus plurality. However, Chinese doesn't employ a system of articles to mark specific versus nonspecific reference and given versus new information as do some other languages (e.g., English and German). In Chinese, these concepts are encoded in particular linguistic forms that differ in their form and precise function from NP types in English.

In Chinese, *nominal determiners* are not obligatory for either singular or plural nouns. Nouns can occur without any determiners at all (see (1.1) in (1) below). Hereafter we will refer to these as *bare nouns*. Bare nouns can be modified by adjectives, by numeral determiner and/or classifier phrases, by demonstrative (and numeral) determiner and classifier phrases, possessives, and relative clauses, resulting in different types of noun phrases. Noun phrases can be also formed by means of nominalization. This type of NP is also called DE-constructions because they formed by

adding a morpheme *-de* to some verbs or adjectives to form NPs. Chinese also has personal pronouns, demonstrative pronouns, interrogative pronouns, and zero forms. Examples of all of these NP types are shown in (1) below

(1)	NP TYPES	EXAMPLES
(1 1)	nouns	<i>qiānbǐ</i> 'pencil(s)'
(1 2)	adj + nouns	<i>cǎisè qiānbǐ</i> 'color pencil(s)'
(1 3)	num + cl + (adj) + nouns	<i>yī-zhī (cǎisè) qiānbǐ</i> 'a/one (color) pencil'
(1 4)	dem +(num)+ cl + (adj) + nouns	<i>zhè-ge (cǎisè) qiānbǐ</i> 'this-CL (color) pencil' <i>zhè liǎng-zhī (cǎisè) qiānbǐ</i> 'this two-CL (color) pencil'
(1 5)	pos + (adj) + nouns	<i>wǒ-de (cǎisè) qiānbǐ</i> 'my (color) pencil(s)'
(1 6)	rel clause + (adj) + nouns	<i>wǒ bàba mǎi de cǎisè qiānbǐ</i> 'the (color) pencil(s) bought by my father'
(1 7)	DE-constructions	<i>hóng-de</i> 'the red one/red ones' <i>zuǒfān-de</i> 'pan(s)/sth for cocking'
(1 8)	personal pronouns	<i>wǒ</i> '1p' ¹ <i>nǐ</i> '2p' <i>tā</i> '3p'
(1 9)	demonstrative pronouns	<i>zhè/nèi</i> 'this/that' <i>zhè-ge/nèi-ge</i> 'this one/that one' <i>zhè-xiē/nèi xiē</i> 'these/those'
(1 10)	interrogative pronouns	<i>shénme</i> 'what' <i>shéi</i> 'who' <i>něi-ge</i> 'which'
(1 11)	zero forms	∅

Spoken Chinese does not distinguish gender at all². Chinese has two plural markers, i.e., *-men*, and *-xie* 'PLU³'; however, their use is extremely restricted. *Men* can only be suffixed to singular personal pronouns *wǒ* '1p', *nǐ* '2p', and *tā* '3p', and occasionally to nouns referring to people or to other non-human animates in personalized contexts.

¹ Literally, first, second, and third person singular pronouns *wǒ*, *nǐ*, and *tā* are translated into '1p', '2p', and '3p', respectively. First, second, and third person plural pronouns *wǒ-men*, *nǐ-men*, and *tā-men* are translated into '1p-PLU', '2p-PLU', and '3p-PLU', respectively (see discussion below)

² Written Chinese has three different forms for third person pronoun *tā* '3p', i.e., for human female (similar to 'she/her' in English), human male (similar to 'he/him' in English), and non-human beings (similar to 'it' in English). This distinction may be a result of the influence of foreign languages

³ PLU is an abbreviation of the literal translation for the Chinese plural markers *-men* and *-xie*

This suffixation yields the plural personal pronouns *wǒ-men* '1p-PLU', *nǐ-men* '2p-PLU' and *tā-men* '3p-PLU', and some plural nouns such as *kèrén-men* 'guests', *yuángōng-men* 'gardeners', and *xiǎo tùzi-men* 'little rabbits'. *Xie* can be only suffixed to the demonstrative pronouns *zhè* 'this' and *nèi* 'that', and to the interrogative pronoun *něi* 'which'. This process yields the plural demonstrative pronouns *zhè-xie* 'this-PLU' and *nèi-xie* 'that-PLU' and the plural interrogative pronoun *něi-xie* 'which-PLU'. In other words, Chinese does not have a particular morpheme for count nouns to grammatically express plurality. Noun phrases without plural markers can be used to denote singular as well as plural objects. The interpretation of an NP as denoting singular or plural objects largely depends on information from both linguistic and non-linguistic contexts. In addition, singularity or plurality can be marked on count nouns explicitly by linguistic means, i.e., adding either *numeral determiner and/or classifier* phrases such as *yī-ge* 'one-CL' and *sān-ge* 'three-CL' or *demonstrative (and numeral) determiner and classifier* phrases such as *zhè/nèi-ge* 'this/that-CL' and *zhè/nèi-sān-ge* 'this/that-three-CL'. In addition, quantifiers such as *hěnduō* 'many', or the plural markers *-men* and *-xie* discussed above may be added. Examples are shown in (2) below.

(2)	singular		plural		singular or plural
	<i>yī-ge</i> one-CL a guest	<i>kèrén</i> guest	<i>sān-ge</i> three-CL three guests	<i>kèrén</i> guest	<i>kèrén</i> guest a guest/guests
	<i>zhè/nèi-ge</i> this/that-CL this/that guest	<i>kèrén</i> guest	<i>zhè/nèi-sān-ge</i> this/that-three-CL these/those three guests	<i>kèrén</i> guest	
			<i>zhè/nèi-xie</i> this/that-PLU these/those guests	<i>kèrén</i> guest	
			<i>hěnduō</i> many many guests	<i>kèrén</i> guest	
			<i>kèrén-men</i> guest-PLU guests		

2.2 Formal encoding of nonspecific versus specific reference by means of noun phrase types

English encodes nonspecific reference by singular nouns with indefinite or definite articles or by plural nouns without articles. Examples, which are taken from Quirk, Greenbaum, Leech, and Svartvik (1972:147), are shown in (3) below.

- (3) *The tiger* is a dangerous animal. (a singular noun with a definite article)
A tiger is a dangerous animal. (a singular noun with an indefinite article)
Tigers are dangerous animals. (a plural noun without articles)

Nonspecific reference is sometimes encoded by nominals with numeral determiners/quantifiers in order to specify the quantity of nonspecific entities, e.g., in cases of subtracting several nonspecific entities from a given group of entities as in (4) below.

- (4) I want *one envelope* and *two pencils*.

As mentioned above, Chinese has no articles and no plural markers for count nouns. Nonspecific reference is mainly encoded in *bare nominals*⁴. An example corresponding to (3) is shown in (5).

- (5) *Lǎohú* shì wēixiǎn dòngwù.
 tiger be dangerous animal
 The tiger/a tiger/tigers is/are dangerous animal(s).

Chinese may also mark the quantity of nonspecific referents by means of nominals with numeral determiners and classifiers. A example corresponding to (4) is shown in (6) below.

- (6) Wǒ yào yī-ge xìngfén liǎng-zhī qiānbǐ.
 I want one-CL envelop two-CL pencil
 I want one envelope and two pencils.

There is no significant correlation between nonspecific reference and numeral determiner and classifier phrases in Chinese. However, nonspecific reference cannot be encoded in *definite NPs* such as nominals with demonstrative determiners and classifiers, nominals with restrictive relative clauses, and pronominals. Generally *bare nouns* are by far the most commonly used form for nonspecific reference (e.g., Chao, 1968; Li & Thompson, 1981).

In contrast to nonspecific reference, specific reference can be encoded by a large range of NPs including bare nominals, nominals with numeral determiners and classifiers, and definite NPs as mentioned above. The type of NP chosen for specific referents on a particular occasion depends on whether or not it is used to indicate given or new information as well as other discourse factors which will be discussed below.

⁴ We use *bare nominals* to refer to nouns that occur without determiners but occur with adjectives (e.g., *dà shān* 'big mountain') and *bare nouns* to refer to nouns without adjectives (e.g., *shān* 'mountain'). In other words, bare nominals include bare nouns, but not the opposite.

2.3 Formal encoding of given versus new information by means of noun phrase types

Chinese NP types can be divided into three subgroups in terms of their uses for given or new information (Chen, 1986): (1) *definite NPs*: i.e., nominals with definite determiners such as demonstrative determiners and classifiers, possessives and restricted relative clauses, and pronominals; (2) *indefinite NPs*: i.e., nominals with numeral determiners and classifiers⁵; (3) *bare nominals (indeterminate NPs)*: i.e., nominals without definite or indefinite determiners such as bare nominals and DE-constructions. Examples are given in (7) through (13) below (from Li & Thompson, 1981).

	EXAMPLES					NP type/information status	
(7)	Nǐ	rènshi	bú	rènshi	nèi-ge	rén?	
	2p	know	not	know	that-CL	person	
	Do you know the/that person?						definite NP/given
(8)	Wǒ	kàn	guò	nǐ	de	nà-běn	shū.
	1p	read	ASP	2p	DE	that-CL	book.
	I have read that book of yours.						definite NP/given
(9)	Lái	le	yī-ge	rén.			
	come	LE	one-CL	person.			
	A person came.						indefinite NP/new
(10)	*Yī-ge	rén	lái	le.			
	One-CL	person	come	LE			*preverbal indefinite NP
(11)	Yǒu	yī-zhī	gǒu	zài	yuànzi-li.		
	be/have	one-CL	dog	be/at	yard-in		
	There is a dog in the yard.						postverbal indefinite NP/new
(12)	Rén	lái	le.				
	person	come	LE				
	The person(s) has/have come.						preverbal bare nominal/given
(13)	Lái	rén	le.				
	come	person	LE				
	A/some person(s) has/have come.						postverbal bare nominal/new

⁵ Li and Thompson (1981:132) noted that "the numeral *yī* 'one', if it is not stressed, is beginning to function as *a*". Gundel, Hedberg, and Zacharski (1993:295) claim that "Chinese represents a very early stage in which the indefinite article is optional and is generally restricted to referential contexts".

- (14) Wǒ mǎi le piào le.
 I_p buy LE ticket LE.
 I bought the tickets.

postverbal bare nominal/given

Definite NPs (see (7) and (8)) can only be used to denote specific referents whose existence/identity is mutually known. Indefinite NPs (see (9)), in addition to their purely quantitative function (cf. (6)), can only be used to denote specific referents whose existence and identity are not mutually known⁶. These NPs cannot be placed in preverbal position (see (10)) (Chen, 1986; Hickmann & Liang, 1990; Li & Thompson, 1981; Sun & Givón; 1985). They must be placed in postverbal position (see (9) and (11)). Finally, when they can be used for specific (given and new) referents, the position of bare nominals in relation to the verb interacts with givenness: when NPs of this type are preverbal, they denote mutually known referents (see (12)); when they are postverbal, they can be either mutually known or not mutually known (see (13) and (14)). In addition to using NP types to mark the contrast of given versus new information, *stress*⁷ is often used to mark new information.

Chinese provides a similar ordered variety (cf. Chapter 1) to represent cognitive information status as shown in (15) below (e.g., Gundel, Hedberg, & Zacharski, 1993). Nominals with numeral determiners and classifiers are used to denote the least presupposed entities, zero forms the most presupposed entities in the discourse or non-linguistic context.

- (15) num-cl-N < bare-N < dem-cl-N < pronominals < \emptyset (zero forms)

2.4 Formal encoding of given versus new information by means of word order

Previous studies have shown that many languages which do not employ a system of articles encode the distinction between givenness and newness of information by means of word order (Firbas, 1964; Frachtenberg, 1913; Givón, 1977; Greenberg, 1966; Heath, 1978; Hickmann & Liang, 1990; Li & Thompson, 1981; Mithun, 1987; Payne, 1987; Tomlin & Rhodes, 1979): Some of them, e.g., Cayuga (Mithun, 1987), Coo (Frachtenberg, 1913; also cf. Mithun, 1987), Ojibwa (Tomlin & Rhodes, 1979), and Papago (Payne, 1987), reserve preverbal position for new information; while the others, e.g., Mandarin Chinese, reserve the same position (i.e., preverbal position) for given information and encode new information in postverbal position (Chen, 1986; Li &

⁶ In her analysis of *classifier phrases* in Chinese, Erbaugh (1986) pointed out that indefinite classifier phrases consisting of *numeral determiners and classifiers* are most common in introducing new referents in discourse. Indefinite classifiers typically mark the first mention of a new entity.

⁷ Children at the one word stage (cf. Brown, 1973) also use rising intonation as a means of marking new information (Atkinson, 1979).

Thompson, 1981; Sun & Givón, 1985).

In a well-known and widely-cited article, Li and Thompson (1975) asserted that in Chinese definite NPs tend to be preverbal and indefinite NPs postverbal, and that Mandarin Chinese has been undergoing a change from an SVO to an SOV language. They suggested that object NPs in SOV order are used for given information, while object NPs in the SVO order provide new information.

However, more recently, Sun and Givón (1985) have pointed out that Li and Thompson's (1975) hypothesis has practically no empirical support. Through a quantified text-based investigation of both written and spoken Chinese, Sun and Givón found that Chinese is a synchronically rigid (S)VO language. They agreed with Li and Thompson that preverbal NPs were interpreted as denoting given information. However, they did not agree that postverbal NPs were interpreted as denoting new information. Their results showed that postverbal position was used for both given and new information. In other words, NPs denoting given information can occur in preverbal position as well as in postverbal position, but NPs denoting new information can only occur in postverbal position. The interaction between information status of referents and NP positions in relation to the verb in verbal clauses is summarized in (16) below.

(16)	NP positions:	NP ₁	V	NP ₂
	information status:	given		given or new

In order to indicate new information, Chinese also has specific sentential constructions. One of these constructions is the *existential presentative constructions*, which is typically found in rigid-order languages for the purpose of referent introductions (Clark, 1978; Hetzron, 1971). Existential presentative constructions in Chinese are constructions that "contain the existential verb *yǒu* 'exist/have', or a verb of posture such as *zù* 'sit', *tǎng* 'lie', or *piāo* 'float', describing where something has been put or placed, as its main verb" (Li & Thompson, 1981:510). Existential presentative constructions allow NPs in agent role to occur postverbally. That is, referents denoted by postverbal NPs in existential presentative constructions are assumed to be unknown to the listener (Chao, 1968; Givón, 1988; Li & Thompson, 1981). Existential presentative constructions always signal the existence of the referents of NPs, usually at some place (i.e. the *locus*), which have two optional forms (Li & Thompson, 1981), shown in (17)a and (18)a. Corresponding examples are shown in (17)b and (18)b.

(17) a. existential verb + presented NP + *zài* 'at' + locus (verb phrase)

b.	Yǒu	<i>yī-zhī</i>	<i>gǒu</i>	<i>zài</i>	<i>yuànzi-li.</i>
	exist	one-CL	dog	be/at	yard-in
	There is a dog in the yard.				

- (18) a. (zài 'at') + locus + existential verb + presented NP + (verb phrase)
- b. Yuànzǐ-lǐ yǒu yī-zhī gǒu.
 yard-in exist one-CL dog.
 In the yard there is a dog.

In both patterns, the presented NPs directly follow the existential verbs. In addition to the existential presentative *yǒu*-construction, Chinese has another type of presentative construction that allows subject-verb inversion, typically in situations where no locus is named. It consists of some intransitive verbs of motion that allow the NP denoting the entity in motion to occur postverbally. These verbs include *zǒu* 'walk', *chū* 'exit', *qù* 'go', *lái* 'come', *dào* 'arrive', *qǐ* 'arise', and directional verbs such as *shàng-lái* 'up-come', *xià-qù* 'down-go' and *jìn-lái* 'enter-in' (cf. Li & Thompson, 1981). Examples are given in (19) and (20) below.

- (19) Lái yī-ge kèrén le.
 come one-CL guest LE
 A guest came.
- (20) Fēi-lái le sān-zhī huā húdié.
 fly-come LE three-CL colorful butterfly
 Here flew three colorful butterflies.

2.5 Noun phrase types, word order and discourse

In a real discourse situation a speaker may open a conversation about a new referent or given referent on first mention. First mentions of referents in Chinese are strongly preferred in postverbal position, no matter if they correspond to given or new information. New referents on first mention must be encoded by indefinite NPs, while given referents on first mention may be encoded by postverbal indefinite NPs, postverbal bare nominals, or even postverbal definite NPs, depending on the assumption made by the speaker about the listener's knowledge of the intended referents.

Furthermore, first mentions that consist of indefinite NPs placed in postverbal strongly inform the listener that the information is new, while those that consist of bare nominals or definite NPs placed in postverbal position normally suggest to the listener that the information may be identified on the basis of shared knowledge.

Subsequent mentions of referents must be encoded by definite NPs or bare nominals but not indefinite NPs. The NP form chosen for particular referents on subsequent mentions also depends on other discourse factors such as the referential distance between the current and preceding mentions. *Referents in coreferential contexts* (hereafter, RCC) (i.e., the most recent mention of the referent is in the immediately

preceding utterance) are often encoded in pronominals. *Referents in non-coreferential contexts* (hereafter, RNC) (i.e., the most recent mention of the referent is not in the immediately preceding utterance) are often encoded by NPs other than pronominals (Chen, 1986; Li & Thompson, 1981).

NPs can occur preverbally or postverbally, depending also on other pragmatic factors such as *topicality* and what *semantic role* an NP possesses (e.g., agent, patient and so on). Topic NPs⁸ occur in the very beginning of an utterance, i.e., the initial position of an utterance. The more animate an NP is, the more likely it is to be a topic in discourse. The higher an NP is in the Animatedness Hierarchy, shown in (21) below, the earlier in the utterance this NP will occur. The lower an NP is in the Animatedness Hierarchy, the later in the utterance this NP will occur. Lean NPs (e.g., pronominals) occur earlier in utterances while more complex forms, i.e., full NPs, are typically placed later in the utterance.

(21) The animatedness hierarchy of case roles (Fillmore, 1968:24-25 & 33):

human agent > other animate agent > inanimate agent >
benefactive/dative > patient more animated > less animated

2.6 Summary

In the above sections, the formal encoding of nonspecific reference (i.e., by means of bare nominals), specific given reference (i.e., by means of NPs other than indefinite ones), and specific new reference (i.e., by means of postverbal indefinite NPs) in Chinese were introduced (see 2.1, 2.2, 2.3, and 2.4). In discourse, Chinese often opens a conversation about a referent for the first time by means of postverbal NPs, regardless of the information status (given or new) of the referent. On subsequent mentions, pronominals are used to denote to topic referents and to refer to other referents in the coreferential context, while nominals are used to refer to referents in non-coreferential contexts.

⁸ The definition of topic (in contrast to subject) is problematic. Complications in distinguishing topics from subjects in Mandarin grammar are discussed in Li and Thompson (1976). Here, I followed the pre-theoretical definition as discussed in Chao (1968) and in Li and Thompson (1976). The general properties of topic defined by Li and Thompson are as follows:

- (1) A topic is always definite in the sense defined by Chafe (1976).
- (2) A topic need not have selectional relation with any verb in a sentence.
- (3) A topic is not determined by the verb.
- (4) Functional role of a topic can be characterized as 'center of attention'.
- (5) A topic does not control verb agreement.
- (6) A topic invariably occupies the S-initial position.
- (7) A topic plays no role in such processes as reflexivization, passivization, Equi-NP deletion, verb serialization, and imperativization.

3 Previous Studies on the Acquisition of Referring Expressions

3.1 The acquisition of referring expressions: an overview

Previous research focussed on the acquisition of definite and indefinite articles in English and French (Brown 1973; Garton 1984; Hickmann 1982; Karmiloff-Smith 1979; Maratsos 1971, 1976) in order to understand whether or not children have the competence to distinguish between specific versus nonspecific reference and between given versus new information in the early phases of development. Most studies have focused on the contrast between definite and indefinite articles as markers of the semantic difference between specific and nonspecific reference, and/or of the pragmatic difference between given and new information. These studies examine when children acquire articles and whether they possess the following knowledge: (1) that the indefinite article codes nonspecific reference and the definite article codes specific reference; and (2) that the indefinite article codes new information and the definite article codes given information.

Recently, there have been studies done in languages that do not employ a system of articles (e.g., Mandarin Chinese, Cantonese, and Japanese (Clancy 1992; Hickmann, 1991a, 1992; Hickmann & Liang, 1990; Szeto, 1993)). These studies have focussed on the following questions: What kind of linguistic devices do children employ for specific versus nonspecific reference and for given versus new information? When do children acquire adult devices in the target language? Are there universal and language-specific features in their developing competence?

These studies will be reviewed in three groups: (1) the acquisition of the semantics of referential devices, (2) the acquisition of the pragmatic functions of referential devices, and (3) the acquisition of the anaphoric functions of noun phrases.

3.2 The acquisition of the semantics of referential devices

3.2.1 Brown's longitudinal study

In his longitudinal study of spontaneous speech, Brown (1973) investigated the acquisition of articles by English-speaking children. He found that children differentiated specific from nonspecific reference by using *the* for the former and *a* for the latter. For example, one of his subjects referred to her drawing with *a moon*. Here *a* was used to refer to a nonspecific instance of a given shape. Subsequently, however, she said: *You take the moon*, and *the* was used to refer to the particular moon she just drew. On other occasions the same child referred to the unique moon in the sky with *the moon*.

Brown also noticed that there were a few cases where it was difficult to judge whether the NPs involved specific or nonspecific reference. Excluding these doubtful cases, Brown suggested that the acquisition point for the use of definite and indefinite articles to signal the contrast between specific and nonspecific reference was 3;5¹ for Adam, 3;5 for Sarah, and 3;0 for Eve. Brown concluded that children "do control the specific and nonspecific distinction as coded by articles" somewhere between 2;8 and 3;5, roughly 3;0.

Brown also discovered that children often made errors in using definite and indefinite articles when they had to take into account their addressee's point of view (also see discussion in Hickmann (1982)), although he did not focus on their acquisition of the pragmatic functions of definite and indefinite articles.

3.2.2 Experimental studies

Experimental studies of the acquisition of definite and indefinite articles for specific and nonspecific reference report contradictory results concerning the time of acquisition. Some researchers like Maratsos (1974, 1976) argued that children as early as 3;6 master the principles of specific and nonspecific reference, but others suggested that children do not use articles properly until the age of about eight years (Karmiloff-Smith, 1979).

ENGLISH

In order to verify Brown's finding concerning the age at which children learn to use definite and indefinite articles for specific and nonspecific reference, Maratsos (1974, 1976) conducted a series of experiments (both production and comprehension) with two groups of young children: three-year-olds (2;8-3;6) and four-year-olds (4;0-4;11).

¹ Age is given in year;month or year;month.day.

In the comprehension tasks, each child was asked to act out two stories told by the experimenter with appropriate toys. Each story had two versions: one with an indefinite expression at a crucial point, the other with a definite expression at the same point. In the *the*-version the child had to use a toy previously used among three identical toys. In contrast, in the *a*-version the child had to use a toy that had not been used among three identical toys. Examples of both *the*- and *a*-versions of the stories are given below. The child was provided with toys including a plastic lion, a plastic tiger, four wooden rabbits, and a few green plastic bushes for atmosphere.

The lion and tiger saw the bunnies, and they went to them. One of the bunnies went over to the tiger. He said hello to the tiger. Now {**a**, **the**} bunny went over to the lion. He said hello to him.

Both the three-year-olds and four-year-olds performed well above chance in the comprehension tasks.

The production tasks included completing a story, elicited imitations, and asking a doll for toys. In the story completion task, for example, the child was told that he would hear part of a story and then he was asked to finish it. No toys and pictures were present. Each story had two versions which were concerned with the following contrasts:

I version
Xs --> a X

D version
a X --> the X

or

I version
a X --> a X

D version
a X --> the X

An example of Maratsos's *Xs --> a X* versus *a X --> the X* version story, the so-called "out to meet" story, is given below.

(Usually told in a context of a man or a child in a jungle, depending on the preceding story.) Now the man was very lonely. He saw (I version: some animals; D version: two animals.) He saw (I version: some monkeys and some pigs; D version: a monkey and a pig.) 'Maybe one of those animals will come out and be my friend', he said. And one of them did. Who went out to the man? (Maratsos, 1976:52)

Thus, in the I-version story, i.e. *Xs --> a X*, responses with nouns with indefinite articles, e.g., *a monkey* or *a pig*, were expected; while in the D-version story, i.e., *a X --> the X*, responses with nouns with definite articles, e.g., *the monkey* or *the pig*, were expected. Maratsos conducted eight such story pairs in order to systematically test children's production control of the definite-indefinite contrast.

Maratsos conducted two production tasks. One task (given only to the three-year-

olds) required imitations with expansions. The children were asked to imitate sentences which formed a complete, very short story. At a crucial point the appropriate article was left out of the story in order for the child to supply it in his imitation. In the other task, the *game task*, children were instructed to ask for toys one at a time out of various toy sets.

As in the comprehension tasks, both the three-year-olds and the four-year-olds also performed well in the production tasks.

Thus, Maratsos concluded that, in general, children as young as three-and-a-half years possessed a well-generalized knowledge of the basic distinction between specific and nonspecific reference. It should be pointed out that in the plural condition of the game task, i.e., where there was more than one toy of that class in the situation, the visibility of the referent affected children's accuracy for nonspecific reference: children tended to use definite articles more often when referents were visible than when they were not.

Garton's (1984) experiments were not directly relevant to the acquisition of articles for specific and nonspecific reference, but rather focused on the functions of definite, indefinite and zero articles in the production of children 3;0 to 3;11. The two major variables considered were: (1) previous naming of objects and (2) the linguistic input in the form of the questions posed by the experimenter. Two kinds of questions were designed to elicit children's responses: (a) "*What did the Farmer do?*" and (b) "*What did the Farmer knock over?*". The function of definite, indefinite and zero articles used by the children were illustrated by Garton (1984:89) with the schema shown below.

Condition	naming		not-naming				
	/	\	/		\	/	\
Linguistic input:	action specified	action not specified	action specified			action not specified	
Form elicited:	∅	the	a	the	∅	a	the
Function:	to-name only	exophoric	naming	deictic	to-name	generic	exophoric

Figure 3.1 Functions of article forms elicited in Garton's (1984:89) experiments

Previous naming had an effect on children's uses of articles. The forms and functions of articles related to each other systematically, depending on the specific question forms discussed above. Three-and-a-half-year-olds used the definite article only to refer to specific referents (deictically or exophorically) and indefinite articles to refer to nonspecific (generic) referents in naming tasks. The children made the distinction between specific and nonspecific reference, although decontextualized systematization

of the linguistic determiners, which encode not only the distinction between specific and nonspecific reference but also the distinction between given and new information, was not yet possible.

FRENCH

Karmiloff-Smith (1979) conducted a series of experiments to investigate the ability of French-speaking children from 3;0 to 11;0 to comprehend and use determiners. Contrary to the results discussed above (Maratsos, 1971, 1976; Garton, 1984), she concluded that children do not master some uses of articles for nonspecific reference until the age of about eight years.

Is there a real age difference between English- and French-speaking children in developing the ability to mark specific versus nonspecific reference? Before answering this question, we have to look into the details of Karmiloff-Smith's experiments. In particular, the experimental designs used by Karmiloff-Smith were more complicated than the ones developed by Maratsos. For example, in her *playroom tasks*, children had to describe the adult's selection of an object in these contexts:

- (a) singleton (i.e., only one object, for example, a red car);
- (b) three similar objects only differing in color (e.g., a red car, a green car, and a blue car);
- (c) three identical objects (e.g., three blue cars).

Karmiloff-Smith assumed that the following uses were appropriate: in case (a) a definite NP was appropriate (e.g., *the car*); in (c) an indefinite NP (e.g., *a car*); and in (b) a DEFINITE NP with A MODIFIER (e.g., *the blue car*). In this last case an indefinite NP was inappropriate.

Karmiloff-Smith found that three-year-olds used the same number of definite referring expressions in all of these conditions. These definite referring expressions were treated as demonstratives because both the child and the experimenter saw which object was denoted. The four-year-olds did distinguish reference in the singleton condition from those in the non-singleton (similar and identical) conditions, using definite referring expressions for the former and indefinite referring expressions for the latter. But they did not distinguish reference in the similar-object condition from those in the identical-object condition. For five-year-olds definite referring expressions without modifiers were used mainly to refer to singletons. The period between five and eight years was essential to the acquisition of definite referring expressions plus modifiers in the similar-object condition and of indefinite expressions in the identical-object condition. Thus, Karmiloff-Smith concluded that the acquisition of articles was fairly late.

Pechmann and Deutsch's (1982) study showed that young children's adequate

verbal descriptions decreased when the experiment required children to produce more complex descriptions for choosing a birthday present from a set of things². Karmiloff-Smith's experiments required children to produce more complex NPs (e.g., *the blue car*) in the similar-object condition. Producing complex NPs requires knowledge about the position and ordering rules of various word-classes (Deutsch & Pechmann, 1982). These requirements could pose some problem for young children. As a result, children produced less complex NPs (e.g., *a car* or *the car*) that were inappropriate for the requirement for Karmiloff-Smith's experiments. However, Maratsos's experiment required less complex NPs (e.g., *a monkey* or *the monkey*).

As noted above, Karmiloff-Smith's experimental tasks were more complicated than those of Maratsos and her criteria were stricter. Given the experimental design used by Karmiloff-Smith, it is reasonable that she found the age of acquisition to be later. It should be also noted that the visibility of referents and previous naming affected children's use appropriate referring expressions in Karmiloff-Smith's study. Young children relied heavily on the non-linguistic support for reference. The visibility of referents provided a basis for use of definite referring expressions in the similar- and identical-object conditions. Previous naming also elicited definite expressions.

The controversy concerning when children are able to mark specific versus nonspecific reference results from different levels of difficulty and different success criteria in the tasks employed. In general, both longitudinal and experimental studies suggest that children have the initial ability to differentiate specific and nonspecific reference at about the age of three or four years.

3.3 The acquisition of the pragmatic functions of referential devices

Much developmental research on givenness versus newness has been undertaken since the 1920s. In 1926, Piaget studied two children's language based on a data collected at the morning class at the *Maison des Petits de l'Institut Rousseau*. He observed that children under seven years of age tend to use pronouns where adults would have choose a more explicit form and that it is difficult for young children to give up their own point of view and adopt that of another person (also see Flavell, Botkin, Fry, Wright, and Jarvis, 1968). He explained this finding by that fact that young children are egocentric, which is "a kind of systematic and unconscious illusion, an illusion of perspective (1959:268)". The same kind of finding was reported in some subsequent research,

² In Pechmann and Deutsch's (1982) Experiment 1, two or three dimensions of the selected gift had to be specified for it to be unequivocally distinguished from the remaining objects of the referential domain. In their Experiment 3, two dimensions of the selected birthday present had to be specified. The adequate verbal descriptions were 50% for the six-year-olds in Experiment 1 and 56% for a group of children consisting of 4 four-year-olds and 19 five-year-olds.

although with varying interpretations (Erbaugh, 1982, 1992; Hickmann, 1982, 1991a, 1992; Hickmann, Hendriks, & Liang, 1993; Hickmann, Liang, & Hendriks, 1989; Karmiloff-Smith, 1979, 1980, 1981; Warden, 1973, 1976; Szeto, 1993). Other studies (e.g., Cox, 1986) found evidence for the opposition position: Preschool children have considerable understanding of other people's views of the world (Cox, 1986). It was found that young children could accommodate their language to the listener, thereby showing that they were aware that referential communication need to direct their addressee's attention to the referents (Clancy, 1992; Emslie & Stevenson, 1981; Keenan & Schieffelin, 1976). It has been pointed out that the importance of pointing is in its use for directing another's attention to some object or event; in a sense, it is a way of sharing the speaker's perspective of the world (e.g., Cox, 1986).

3.3.1 Longitudinal and observational research and prelinguistic referring devices

ENGLISH

With respect to the acquisition of articles, Brown (1973) noticed that three-and-a-half-year-olds often failed to use articles even in cases where they had to take their addressee's point of view into account. This was at the point when they controlled the specific versus nonspecific distinction as coded by articles. In other words, three-and-a-half-year-old children have not yet mastered the pragmatic given versus new distinction as coded by articles. He did find, however, some relevant use by about the age of four years (cf. Hickmann, 1982).

Other researchers have focused on how children refer to new entities (Atkinson, 1979; Keenan & Schieffelin, 1976), rather than on how they acquire articles. Atkinson (1979) reported that children at the one-word stage use various ways to establish the existence of referents. For example, his subject Gordon used *attentional vocatives* to call his listener's attention to an object appearing in his visual field, such as *oh see* and *Mummy!* Only when the child got feedback from his listener did he predicate something about that entity. Otherwise, he would give up this topic. Non-linguistic devices such as *pointing* and *attentional vocatives* were found to have the special function of directing the adult's attention to the intended referents at this stage. Atkinson suggests that young children establish the existence of new referents using non-linguistic devices such as pointing and vocatives and that they need to secure the listener's attention to the referent. That is, they are not "egocentric" - joint attention is the prelinguistic device to establish the necessary condition for reference.

Early studies (such as Stern, 1974; Atkinson, 1979) suggested that gazing is one of the earliest ways to secure joint attention. Keenan and Schieffelin (1976) assume that there are two basic requirements to identify referents in discourse: (1) the speaker must

secure the attention of the listener and (2) he must articulate his utterance clearly to establish the discourse topic. They analyzed six 30-minute video tapes of a mother and her child's (1;4.3-2;10) conversational data and 25 hours of audio- and video-taped interactions of twin boys (2;9-3;9) with one another and with adults.

They found that children of different ages employed different devices to establish the existence of new referents. Children at the one-word stage heavily employed a variety of devices, both non-verbal and verbal, to direct the listener's attention to the new referent. The conversations of young children were overwhelmingly about objects, people, or events present in the situation. Non-verbal information was very important for the listener to identify the new referent intended by the child. From the one-word stage (cf. Brown, 1973) on, children mainly used verbal means, e.g., notice verbs (e.g., look) and deictic particles (with or without accompanying non-verbal devices), to establish the existence of new referents. Also, naming was used as a device for introducing new referents before adult devices were acquired. Before the age of three years, children started to talk about referents that were not in the physical environment. In these cases, the referent was often not identified by the listener on the first mention, but children did expect confirmation from the listener about that referent. They were reluctant to continue the conversation without their listener's identification to the referent.

Keenan and Schieffelin observed that the children did take the listener's perspective into account and used different means at different development phases. They failed to establish the existence of new referents, especially when referents were absent. They concluded that the corresponding linguistic devices were not yet available for introducing new referents before the age of three-and-a-half years.

In the longitudinal studies of young children's (at the age between 2;0 to 3;6) narratives, Peterson *et al.* (Peterson, 1990; Peterson & Dodsworth, 1991) found that the children's narratives were context-dependent: the uses of fully explicit linguistic devices for referent introductions were seldom seen in children under the age of three-and-a-half years.

At this point an important distinction should be made: children's sensitivity of the fact that conversation requires the listener's attention and children's ability to take into account the listener's perspective at least insofar as these uses of linguistic devices are concerned. It will be demonstrated in Chapter 6 of this study that children are sensitive to the need to get the listener's attention to intended referents rather early, but do not always take their listener's point of view into consideration, at least as might be indicated by appropriate linguistic means (i.e., postverbal indefinite or indeterminate NPs) to introduce new referents into discourse.

ITALIAN

Similar evidence to the finding of Atkinson's (1979) and Keenan and Schiefflin's (1976) discussed above comes from studies of Italian children (Bates, 1976; Bates, Camaioni, & Volterra, 1975; Bates, Benigni, Camaioni, & Volterra, 1976). Bates *et al.* reported that children at about one year began to check whether or not their listener was attending to the referent. They would make deliberate efforts to attract the listener's attention if he wasn't looking. They would make a noise or even go over to the listener and touch his hand or clothing in order to get his attention. This checking up on the listener shows that attention-establishing for children of this age already has a communicative function. The speaker must first make sure that the 'listener' is attending to the referent.

MANDARIN CHINESE

Erbaugh's (1982, 1992) longitudinal study on the acquisition of Mandarin Chinese was not directly focused on the acquisition of referring expressions, but rather on the acquisition of Mandarin Chinese in general. However, some of her work was related to this topic. With respect to word order, she found that Mandarin-speaking children's canonical sentences are strictly SVO. "Early word order was almost perfect SV or VO, almost entirely action-patient, agent-action, or patient-state (Erbaugh, 1992:417)". A rigid SVO order stage held between the ages 2;0 and 2;9. The reordering of word order, for pragmatic reasons, seemed to be difficult for them. "They did not attempt discourse-sensitive variations of word order until basic sentential relations were under control" (Erbaugh, 1992:416), i.e., at the age of around three years.

In the discussion about the acquisition of classifiers in Mandarin Chinese, she found that specific classifiers were surprisingly rare. Children (and also adults) frequently used the general classifier *-ge* where a classifier was obligatory. Specific classifiers were reported to be more likely when more of the following conditions were present: "physically manipulated referent; not physically present; familiar to the speaker; new topic; request, fantasy or narrative; first mention of referent; indefinite reference rather than definite; classifier used with the nouns, not as a pro-form" (Erbaugh, 1992:415). Discourse context was suggested to trigger the appearance of specific classifiers. In contrast, reference maintenance only involved the general classifier *-ge* or the absence of any classifier.

CANTONESE

Szeto (1993) studied Cantonese-speaking children's development of specific versus

nonspecific reference, based on longitudinal data of three children aged 1;10.1 to 2;2.0, 2;4.1 to 2;7.3, and 2;8.1 to 2;11.3.

Cantonese is a dialect of Chinese, spoken in South China and Hong Kong. Like Mandarin Chinese, Cantonese does not employ a system of articles. In both Mandarin Chinese and Cantonese, referring expressions can be used for specific reference by means of the internal composition of the NPs and by means of word order (Chao, 1968; Cheung, 1972; Chen, 1987). The distribution of NPs in Cantonese for given versus new information is slightly different from that in Chinese, as shown below.

Table 3.1 Types of NPs in Cantonese and their possibility to denote given and new referents (Szeto (1993:4))

	Specific Reference	
	given	new
Proper Names	+	-
Pronouns	+	-
DEM+CL+N	+	-
Genitive NPs	+	+
Bare Nouns	+	+
NUM+CL+N	-	+
CL+N	+	+

Nouns with only classifiers and no determiners (hereafter CL+N) in Cantonese can be used to refer to either given or new referents. Word order can also be used with these NPs to distinguish the denoted referents that are given or new. CL+N, which are not allowed to occur preverbally in Mandarin Chinese, often occur in preverbal position to refer to given referents in Cantonese; CL+N in postverbal position tend to be interpreted as denoting new referents. Therefore, to encode given and new in Cantonese, children have to grasp the correlation between word order, NPs, and given versus new information.

It was found that children used bare nominals in first position to introduce new referents that were not in the immediate situation and were minimally identified. They often used bare nominals in preverbal position for given referents where adults typically used CL+N in preverbal position. Children sometimes omitted the referents completely. In these cases adults often found it difficult to identify the intended referents. Therefore, the children had not yet acquired the language-specific way of using CL+N in preverbal position to mark givenness.

Results from this study and from the ongoing cross-sectional experimental studies of Szeto and Lee (see Szeto, 1993:10) suggested that Cantonese-speaking children as old as five sometimes failed to take the listener's perspective into account. They have not fully mastered adult linguistic devices to mark givenness and newness before the age of

five years.

3.3.2 Experimental research of linguistic devices for given versus new information

ENGLISH

Warden (1976) studied children's ability to use the indefinite article to introduce new referents. He carried out three experiments. In the first experiment, two tasks (i.e., a describing and a naming tasks) were given to each child. Both tasks required the use of devices for reference to specific entities that were new for the listener on first mentions, because the listener was prevented from seeing the picture the child was describing. Thus, in order to perform appropriately, the children had to use the indefinite article to introduce referents.

Four-year-old children consistently used the indefinite article (100%) in the naming task. However, they used the indefinite article significantly less (only 21%) in the description task³. Warden suggested that children have not yet acquired the ability to introduce new referents by means of the indefinite article before the age of four years.

Warden's second experiment was designed to investigate whether or not children aged 4;0 to 4;8 distinguish reference for which joint attention was established from those for which no joint attention was established. The task was to describe four types of cards one at a time. The cards differed in whether or not there were other members of the same class in the background. The children did not significantly differentiate between definite and indefinite referring expressions in the joint-attention and no-joint-attention conditions: they used definite referring expressions significantly more often than indefinite ones in both conditions. However, one difference did emerge: when children looked at the picture together with the experimenter, they used significantly more deictic words than when they looked at the picture by themselves. There was no effect due to the presence of other members of the class in the background.

According to Warden, the results cannot lead to the conclusion that children failed to take the listener's knowledge into account. Children might assume that the listener (i.e., the experimenter) knew the pictures even face down. Such an assumption could weaken or eliminate the expected difference between the joint-attention and no-joint-attention conditions.

Thus, he conducted a third experiment, in which each subject was presented with a cartoon story and was asked to tell it to another subject who did not know and could not see the pictures. Four groups of children, three-year-olds (3;0-3;11), five-year-olds

³ Effects of the naming task was also found in previous research (cf. Garton, 1984; Maratsos, 1974, 1976).

(5;0-5;11), seven-year-olds (7;0-7;11), and nine-year-olds (9;0-9;11), and a group of adults participated in this experiment.

First of all, the adults always introduced referents for the first time by means of indefinite referring expressions. Second, there were very few age differences in the use of referring expressions for second and subsequent mentions - the referring expressions used were predominantly definite. Age differences were found for first mentions. Indefinite referring expressions used for referent introductions significantly increased with age except between five and seven years. Only adults and nine-year-olds used indefinite referring expressions significantly more than definite ones for first mentions. Thus, Warden argued that children under five failed to take into account their listener's knowledge of the intended referent, therefore, their referring expressions were predominantly definite.

Warden (1981) further explored possible reasons for the diverging results from different studies on children's acquisition of the indefinite article for referent introduce referents, specifically between Maratsos (1974,1976) and Warden (1976). "Context variations" (i.e., the presence or absence of the referents, the presence or absence of the addressee, describing the events portrayed in a film while watching it versus afterwards) were assumed to account for this divergence. However, no such effects were found in the production of his five- to eight-year-old subjects. Therefore, he explained that "the verbal task of describing the event itself may have proved sufficiently demanding to prevent children from considering the rules for the article use" (Warden, 1976:98).

Emslie and Stevenson's (1981) study focused on children's ability to use the indefinite article to introduce new referents and the definite article to refer to given referents at the age when different semantic distinctions conveyed by the articles were acquired (Brown, 1973; Maratsos, 1974, 1976). Three groups of children, two-year-olds (2;2-2;11), three-year-olds (3;3-3;10) and four-year-olds (4;1-4;10), and a group of adults were studied. In the preliminary study, Emslie and Stevenson used a design similar to the one in Warden's Experiment 1 (see discussion above). However, they found that children from age 2;2 on used the indefinite article in both naming and description tasks. Their use of the indefinite article occurred predominantly in predicating constructions (e.g., *That's a mouse*).

In order to explain this divergence between their results and the results of Warden's Experiment 1, Emslie and Stevenson conducted three experiments. In the first experiment, each subject was asked to tell a three-picture cartoon story to the listener. A screen was placed between them to prevent the listener from seeing the cartoon pictures, which were given one at a time. The most striking finding was that all subjects predominantly used indefinite articles for first mentions. All but the two-year-olds differentiated between first and subsequent mentions of referents: *a* was used predominantly for the first mention of referents and *the* for subsequent mentions of

them. Two-year-olds overused NPs containing the indefinite article for subsequent mentions.

They conducted a second experiment to find out whether or not the two-year-olds' overuse of indefinite articles was due to their treatment of the three pictures shown one at a time rather than successively. The child was allowed to investigate the pictures in advance until he could make up a story. A new referent was added to the third picture in Experiment 2, in order to investigate if children sometimes forgot to take the listener's point of view into account.

The main finding of Experiment 2 confirmed that of Experiment 1: all but the two-year-olds differentiated between first and subsequent mentions of referents. Furthermore, all subjects including adults used definite referring expressions as much as indefinite ones to refer to new referents in the third picture. Egocentricity could not be the reason for the children's use of definite referring expressions since adults also used such expressions as much as indefinite ones. Since the new referent was an integral part of the story, it might be inferred from the previous context.

To avoid associative anaphoric use of a definite referring expression for the first mention of a referent, a third experiment was designed to have a total unrelated new referent in the third picture. Thus, an NP consisting of the indefinite article was the only appropriate referring expression for the unrelated new referent. Results showed that four-year-olds and parents, but not three-year-olds, used significantly more indefinite referring expression for the new referent in the third picture⁴.

Emslie and Steveson suggest that children of four years and beyond master the identifying function of indefinite articles and the anaphoric function of definite articles. Furthermore, non-linguistic context variation showed effects on the use of articles.

FRENCH

The study of Kail and Hickmann (1992) examines referent introductions in narratives produced by French children of six, nine, and eleven years in two situations as follows. In the *mutual knowledge situation* (hereafter MK), the children and their interlocutor were looking at a picture book together, therefore, children could assume mutual knowledge with the listener. In the *no mutual knowledge situation* (hereafter NMK), the interlocutor was blindfolded, therefore, he or she did not share knowledge of the story with the children.

They found that children in all age groups showed the ability to differentiate linguistic devices across these two situations: they used more indefinite determiners in the situation where the interlocutor could not see the picture book (NMK) than in the

⁴ The two-year-olds did not participate the third experiment.

situation where he could see them (MK). Age differences were also found: six-year-olds used both NPs containing definite and indefinite determiners as frequently in NMK and these NPs containing indefinite determiners were frequently used as "deictic labelling" (or in predicating constructions); nine-year-olds tended to use NPs containing indefinite determiners in NMK where such devices were necessary, but never in MK where NPs containing definite determiners or pronouns were sufficient; and eleven-year-olds frequently used NPs containing indefinite determiners in both situations. Kail and Hickmann summarize the results in terms of a development progression showing that children acquire the rules governing referent introductions in three steps: (a) they have no systematic rules in the absence of mutual knowledge; (b) they acquire a rule associating appropriately different linguistic devices with the presence versus absence of mutual knowledge; (3) they acquire an additional rule that generalizes indefinite NPs to all narrative situations, regardless of mutual knowledge conditions.

MANDARIN CHINESE

In Mandarin Chinese, as discussed in Chapter 2, appropriate referring expressions for first mentions are characterized by NPs containing indefinite determiners or indeterminate NPs in postverbal position. Chinese adults typically differentiate between first and subsequent mentions: with few exceptions, their referent introductions consist of postverbal indefinite or indeterminate NPs, while NPs in reference maintenance consist of preverbal and postverbal definite and indeterminate NPs.

To investigate Chinese children's ability to use appropriate devices for referent introductions and reference maintenance, Hickmann and her colleagues (Hickmann, Hendriks, & Liang, 1993; Hickmann & Liang, 1990; Hickmann, Liang, & Hendriks, 1989) also used the method of asking children to narrate cartoon stories to a blindfolded listener. This method ensures that referents were new to the listener on first mention. If children take their listener's needs into account, they have to introduce the referents explicitly for the first time with postverbal indefinite NPs.

Several groups of children between four and ten years, and adult control groups, were studied across four language groups: English, French, German, and Chinese. Labelling was frequently used by young children on first mentions. Chinese children between four and ten showed an increasing tendency with age to differentiate referent introductions from reference maintenance by means of both forms and positions. The children begin to mark newness with both indefinite NPs and postverbal position at five. However, they tend to rely more on NP types than on word order. Even the older children did not use postverbal position to mark new information as frequently as did the adults, consequently producing both postverbal and preverbal indefinite NPs.

The results suggest that Chinese children do not fully master the distinction

between given and new information encoded by indefinite NPs and postverbal position before the age of eight years. Although Chinese uses different referring strategies to mark newness versus givenness, Hickmann and her colleagues showed that Chinese children under the age of seven years have not yet mastered the intra-linguistic devices to introduce referents, a result which is comparable to the results from English, German and French-speaking children (also see Hickmann, 1982; Hickmann, Liang, & van Crevel, 1989; Karmiloff-Smith, 1979).

JAPANESE

Clancy (1992) studied Japanese children's referential strategies in narratives. Six groups of children from 3;8 to 7;4 and a group of adults were investigated. Two types of discourse were elicited: narrating a cartoon story and retelling a video story. The picture-based narratives were elicited with a set of seven cartoons, each consisted of five to nine cartoons presented as a book. The cartoon stories consisting one or two main characters, and one or more (often two) secondary characters. The child was asked to tell the stories to a blindfolded listener. In the video-based narratives children were shown a short videotape and asked to retell the plot to the listener. Thus, referents on the first mention were new to the listener in both types of discourse.

In Japanese, nouns are typically followed by postpositions indicating their grammatical and/or discourse role. Sentence subjects may be followed by the marker *-ga*, the topic marker *-wa*, or may not be marked at all. The major choice of referring expressions is between nominals versus ellipsis. Nominals are used to introduce referents into discourse. The predominant referential form for "given" information in Japanese is ellipsis, which is comparable in discourse frequency to English pronouns (Clancy, 1980; Hinds, 1978, 1982, 1983, 1984). Pronouns do exist but are fairly rare and have an unnatural noun-like nature in Japanese. No information (e.g., person, number, etc.) about the elided subjects is recoverable from the verb⁵. Japanese speakers must rely heavily on the listener's knowledge about the intended referent from the context.

Clancy analyzed reference in the following three discourse contexts: (1) the referent introduction context, (2) the switch subject context, i.e., the subsequent mention of a referent in subject role was not preceded by a coreferential expression the immediately preceding utterance; and (3) the same subject context, i.e., the subsequent mention of a referent in subject role was preceded by a coreferential expression in the immediately preceding utterance.

An interaction between discourse context and age was found. Ellipsis was

⁵ In this respect, Japanese contrasts prodrop languages such as Spanish where all information can be recovered by the verb morphology.

assumed to be the most suitable referential form for the same-subject context, because referents in this context were given and in the consciousness of both the child and the listener at the moment of reference. Children used ellipsis as did adults in the same-subject context. In the switch-subject context, referents were given, but not in the immediately preceding utterance. The switch-subject context often involved some degree of discrepancy between the child's relationship to the referent and the listener's, e.g., the referent was in the speaker's focus of attention, but might not be for the listener. Nominals were frequently chosen by adults in the switch-subject context. Children used significantly more nominals in this context than in the same-subject context. In the referent-introduction context where referents were new to the listener, children used significantly more nominals than in the switch-subject and same-subject contexts, which means that they were also sensitive to the different status of referents on first mention in comparison to all other contexts.

Clancy claims that Japanese children at the age of about four years are able to take the listener's needs into consideration.

With respect to age difference, the two youngest groups of children (3;10 and 4;6) used ellipsis for referent introductions and in the switch-subject context significantly more than the groups of children over five. They sometimes used ellipsis in the referent-introduction and switch-subject contexts despite potential ambiguity. Clancy concluded that children under five could not use appropriate referring expressions to the same extent as the adults. However, no significant age difference was found in the same-subject context: all age groups used a very low percentage of nominals.

In sum, a gap exists between the age when children take the listener's needs into account and the age when they master the adult-like linguistic devices for given versus new information. Clancy suggests that adequate referential choice requires at least a set of skills necessary to identify discourse context such as analyzing the relationship among speaker, listener, and referents in various discourse situations. Linguistic factors, as well as cognitive and social ones, must be taken into consideration in order to accommodate her results.

3.4 The acquisition of the anaphoric function of pronominals in discourse

Most work on the acquisition of the anaphoric function of pronominals has concentrated on Indo-European languages and on children above the age of three years. There is also a study on non-Indo-European languages as well as a cross-linguistic study. Each will be discussed in the following three sections.

3.4.1 Studies of Indo-European languages

FRENCH

Karmiloff-Smith (1980, 1981) investigated the process underlying pronominalization. Thematic structure in discourse was hypothesized to play an important role. On the basis of this hypothesis, four story types were used to investigate children's acquisition of anaphoric function of pronominals. Two of them contained clear thematic subjects and the other two did not. Children between four and nine were tested individually.

Karmiloff-Smith found that young children (i.e., under six years) clearly relied on spatial deixis (e.g., *there*) or frequent para-linguistic gestures which accompanied by their pronominalization, as well as on the non-linguistic context to which they refer. She claimed that "the deictic pronouns with the para-linguistic gestures were totally unambiguous (1981:134)". No evidence was found that children linked up their utterances linguistically. Children from the age of six years on used pronouns anaphorically. At this point, they were sensitive to reference maintenance and intra-linguistic cohesive devices in general. They made use of a simplified processing procedure to link up their utterances, reserving pronominalization in the sentence-initial "slot" for the thematic subject and using nominals for all other referents. Pronominalization of non-thematic subjects was rare.

Karmiloff-Smith suggests that young children's pronominalization in discourse is based on the "thematic subject strategy" (or the thematic structure). Fully adult-like anaphoric uses of pronominals are not acquired before the age of eight years.

GERMAN

As a follow up of Karmiloff-Smith's study (1980, 1981), Bamberg (1986) collected narrative data of three groups of German-speaking children: 3;5-4 years, 5-6 years, and 9-10 years and a group of adults, using the *Frog-story* which contained 24 pictures⁶. The subject was looking at the picture together with the experimenter when he told the story. This study focussed on the acquisition of anaphoric expressions, especially to refer to the two main characters of the story, *a boy* and *a dog*.

Nominals and pronominals, were coded for *switching reference*, i.e., from one character to the other, and *maintaining reference*, i.e., continuing to refer to one of the two protagonists and progressing with the story.

⁶ The *Frog-story* was used in the study of children's narratives in different languages including Mandarin Chinese, English, German, Hebrew, Spanish, and so on (Berman and Slobin, 1993; Slobin, 1991). This story consists of *a boy* and *a dog*, who go looking for their friend, *a frog*.

Adults showed a great preference for an anaphoric strategy, i.e., for using nominals to switch reference and pronominals to maintain reference. Children of the youngest age group, as well as some of the children of the middle age group, imposed a strategy consisting of using third person pronouns for the main protagonists, irrespective of whether reference was switched or maintained.

At the same time, however, the referential content of the NPs had an effect on the choice of referring expressions. The protagonist that was lower in the animacy hierarchy (i.e., the dog) was first to match the adult-like anaphoric strategy: it was reintroduced/switched by nominals and maintained by pronominals. The protagonist higher in the animacy hierarchy (i.e., the boy) was denoted by several strategies, including the *thematic-subject strategy* proposed by Karmiloff-Smith (1981) and the *anaphoric strategy*. Children of different ages used different strategies. The *thematic-subject strategy* was most common in the youngest age group and the tendency to employ this strategy decreased with age. In contrast, the *anaphoric strategy* was used increasingly with age and became the predominant strategy in the oldest group of children. These results are not entirely compatible with Karmiloff-Smith's findings, since they show a relatively early use of the *thematic subject strategy*. However, the procedure was not the same, since children were more familiar with the story in Bamberg's study (cf. Hickmann, 1991b).

Although referent introductions were not the focus of this study, adults used nouns with indefinite articles almost half of the time and nouns with definite articles the other half. The fact that the referents were in the attention focus of both the speaker and the listener elicited definite articles on first mention. Similarly, children clearly preferred (75%) to use nouns with definite articles to introduce new referents. Only less than 10% of referent introductions were marked by nouns with indefinite articles.

In view of these findings, many factors, including animacy and reference-switching versus reference-maintenance, may affect children's use of anaphoric devices. Children of different ages may employ different kinds of strategies, both linguistic and non-linguistic, as a function of the relationships among the speaker, the listener, and the third person referents, and among the third person referents themselves in the story. These studies have indicated that not only linguistic skills, but also cognitive skills play an important role in development of marking reference.

3.4.2 A study of non-Indo-European languages

Saito (1980) studied Japanese children's acquisition of deictic and anaphoric reference in conversation. A longitudinal study of three pairs of mothers and children from one to three, and a cross-sectional study of 20 pairs of children from four to five years were carried out. Each session of the longitudinal study consisted four sub-sessions: (1) the

mother and the child played with the child's own toys; (2) they played with the researcher's unfamiliar toys; (3) they played with the researcher's picture books, also unfamiliar to them; (4) the session consisted of a conversation without any toys or books present. The cross-sectional study consisted of free interactions of each pair in a preschool with familiar toys. All interactions were videotaped.

Children before the age of two years talked primarily about perceptibly shared objects. Reference was most of the time deictic. Children of this age often combined words with demonstrative and directional gestures to indicate the intended referent. However, the frequency of reference to objects shared in the linguistic context gradually increased with the children's age. They first made reference to non-perceptible objects that contrasted to perceptible things. At this intermediate step, they benefitted from redundant information in the perceptible and linguistic contexts. This intermediate kind of reference seems to play a mediating function in the child's development from deictic to anaphoric reference.

As for referring forms, it was found that children acquired the demonstrative *KO-words* (which are used to refer to referents at a proximal distance spatially and/or temporally) earlier than other demonstrative words. This form mapped onto more functions than the one in adult language. Other demonstratives (i.e., *SO-words*, *A-words*, and *DO-words* which are used for referents at medial and distal distance spatially and/or temporally) were acquired later.

Saito concluded that there were three steps in children's developing reference ability: (1) deictic reference; (2) merged reference; (3) anaphoric reference. At the deictic reference step, referents were perceptibly shared by both the speaker and the interlocutor. At the merged reference step, reference had characteristics of both anaphora and deixis (e.g., referents were absent but contrasted to present objects). At the anaphoric reference step, reference was made in relation to linguistic context. Saito's results also confirmed the finding that young children mainly talk about things in the here-and-now at early developmental phases and gradually develop the ability describing remote events in the past and near future (Bruner, 1978; Halliday, 1975).

3.4.3 A cross-linguistic study

Hickmann (1991a) studied the development of cohesion by examining children's uses of referring expressions in discourse. She mainly focused on the acquisition of reference maintenance by English children. The results were then compared to those of Chinese, German, and French children.

Hickmann argues that, although coreference is necessary for an expression to be anaphoric, it is not a sufficient criterion to distinguish deictic from anaphoric uses of the same forms, e.g., when the denoted referent is presented in the non-linguistic context.

In her study of the development of cohesion in English children, the child was asked to narrate picture stories to a blindfolded listener, who had to tell the stories back. Three age groups were examined: four-year-olds, seven-year-olds, and ten-year-olds. Each child was asked to tell two cartoon stories, Story A and Story B (Story A contained 5 pictures and Story B contained 6).

Children showed a clear progression in using appropriate referring expressions (NPs containing indefinite determiners) in referent introductions. Furthermore, the uses of "explicit labelling" (e.g., *this/that is a/the horse*) or "potential labelling" (e.g., *a horse, the horse, horse, or horse running*) found in four-year-olds' first mentions of referents disappeared by the age of seven years. Although inappropriate first mentions (i.e., using definite nominal and pronouns) decreased with age groups, it remained at 15% even for the ten-year-olds.

Her analyses of reference maintenance involve referring expressions that were used in narratives to denote the character after they had been first mentioned. These NPs were classified into five groups: (1) nominals with indefinite determiners; (2) definite nominals; (3) pronouns; (4) zero anaphora; (5) nominals (regardless of presence and type of determiners) used in explicit (e.g., *this/that is a/the horse*) or potential (e.g., *a horse, the horse, horse, or horse running*) labelling. First, few NPs containing indefinite determiners were used outside of labelling in reference-maintenance. Second, some "explicit labellings" or "potential labellings" were often found for referents on first and subsequent mentions at four years (23% for story A and 15% for story B), but rarely at seven years (2% for Story A and none for B), and never at ten years.

The two stories differed with respect to the uses of definite NPs versus highly presupposing expressions (pronouns and zero anaphora), especially at seven and ten years. The uses of pronouns and zero anaphora were much more frequent than other (nominal) expressions. This difference was due in great part to the fact that story A had a "main" character (i.e., the horse), whereas story B did not.

Furthermore, each referring expression that maintained reference to the characters was also analyzed in terms of the preceding context. Hickmann first distinguished expressions that were used in agent and/or subject role (hereafter A/S) from those that were in other role (hereafter non-A/S). Then, each referring expression was characterized as having one of the three types of contexts as follows:

- (1) the expression was preceded by a coreferential expression and both were used in A/S role within their utterance (coreference A/S);
- (2) the expression was preceded by a coreferential expression, but they were not *both* in A/S role (non-A/S coreference);
- (3) the expression was not preceded by a coreferential expression (non-coreferential context).

The great majority of pronouns and zero anaphora were preceded by coreferential contexts and this coreferential relation was of the A/S type, while nominal were more frequently used in non-coreferential contexts, for both stories and for all children at all ages.

In summary, referent introductions and reference maintenance in young English children's narratives showed that they were deictic in some respects. Adult-like systems for referent introductions and reference maintenance have not been acquired before the age of seven years. With respect to the nature of reference maintenance in young children, Hickmann argued that, in contrast to other studies (such as Karmiloff-Smith, 1981), "from 4-years, reference maintenance follows some of the rules of the adult system which involve interactions among *intra*-sentential properties (e.g., roles of NP with the clause) and *inter*-sentential properties (e.g., pragmatic roles of NP as more or less topical in discourse)" (Hickmann, 1991:181).

A similar development with age was found in using appropriate NPs for referent introductions and for reference maintenance in Chinese and French children (see Hickmann, 1988, 1990). However, the specificities of different languages also affected the developmental course of discourse cohesion. For example, French children's frequent uses of *left-dislocations* (e.g., *L'oiseau il arrive* 'The bird he arrives') were rarely observed in Chinese and English children (Hickmann, 1988).

One more point is worth mentioning with respect to the explanation of results. Hickmann herself noted the difficulty in differentiating NPs used for subsequent mentions that were used deictically or anaphorically. The experimental method prevented the listener from seeing the pictures of the story in order to maximize the chances of distinguishing anaphoric uses from deictic uses of referring expressions. However, a considerable amount of first mentions of referents were inappropriate, consisting of definite nominals and pronouns (48%, 35%, and 15% in story A, and 48%, 38%, and 12% in story B for four, seven, and ten-year-olds, respectively). Thus, children did refer to referents deictically, even in a situation where they should not. They did not always take their listener's perspective into consideration. Definite forms, pronouns, and zero anaphora on subsequent mention may not be used anaphorically by young children.

3.5 The acquisition of reference from a universal perspective

Much work has been done on the universality of reference, but only one specific study on its acquisition, namely Cziko (1986)'s reviewing work. This work was done in the framework of Bickerton's Language Bioprogram Hypothesis (hereafter LBH) (Bickerton, 1984). One of the components of LBH is the claim that children are universally sensitive to the distinction between specific and nonspecific reference. Cziko (1986) empirically tested this claim by reviewing a number of studies on children's comprehension and

production of articles.

Of seven relevant data bases in English and French, Cziko found that only two of them provided clear empirical support for this hypothesis. Furthermore, all studies reviewed generally show the following four-stage hypothesis during the acquisition of English and French articles: (1) the use of the definite and/or indefinite article(s) for specific reference, and zero articles for nonspecific reference and naming; (2) the uses of the indefinite article for nonspecific reference and of the definite article for specific reference, whether or not they are presupposed; (3) an increase in the correct use of the indefinite article for specific non-presupposed referents, with a concomitant decrease in the correct use of the definite article for presupposed referents; and (4) the correct use of the definite and indefinite articles.

This four-step hypothesis was based entirely on results from English and French. More evidence from other languages, including non-Indo-European languages, is required to test the universal hypothesis that children are sensitive to the distinction between specific and nonspecific reference. The four-step model generated from the studies on the acquisition of English and French articles can be also tested on acquisition facts from other languages.

3.6 Summary

The research reviewed above can be summarized as follows. First, a naming effect was found in many studies focusing on young children's acquisition of linguistic devices for given versus new information. Previous naming elicited indefinite articles primarily in predicating constructions (e.g., *this is a cat*) in children at around the age between two and three (Emslie & Stevenson, 1981; Hickmann, 1982, 1991; Keenan & Schieffelin, 1976; Maratsos, 1974, 1976). Emslie and Stevenson (1981) did not treat indefinite articles in predicating constructions as having an identifying function. Indefinite articles in predicating constructions are not typically used to identify referents on first mention in adult languages, but may carry this function for young children, especially when referents on first mention are here-and-now, i.e., in the present situation.

Second, Maratsos (1974, 1976) also found that the presence of referents in the physical environment often triggered definite referring expressions. In a natural situation, the speaker and listener often share the physical environment, so that a definite referring expression for a new appearing object may in fact be acceptable. If young children initially hypothesize that definite referring expressions are used for visually available referents, they may overuse definite referring expressions for nonspecific reference in the situation of selecting a non-specified referent from given groups of entities from the same class and for first mentions where indefinite referring expressions should be used, as long as they are present in the physical environment.

Third, in Warden's study (1981), context variation was not found to have an effect on children's use of indefinite articles to introduce referents, but such an effect was found in Emslie and Stevenson's study (1981). Note that there was an age difference in the subjects of these two studies, between five and eight years for the former and between 3;2 to 4;10 years for the latter. Context variation may have effects on young children, but not on older ones.

Fourth, the studies on children's acquisition of anaphora for reference maintenance showed that young children's pronouns are, at least to some extent, initially used deictically rather than anaphorically (Hickmann, 1988, 1991; Karmiloff-Smith, 1981). The intra-linguistic uses of pronouns are not developed earlier than eight years.

4 Aim of the Present Study and Methods

4.0 Introduction

As discussed above, the distinctions between specific and nonspecific reference and between given and new information are universal. However, these distinctions are not encoded in the same way across languages. Evidence from English, French, and German suggests that these distinctions are based on cognitive universals and are obligatorily grammaticalized on the NPs (e.g., with definite and indefinite articles). However, studies on languages such as Cayuga, Chinese, Coos, and Ngandi show that these distinctions can be encoded with NP types and/or word order instead: Chinese encodes new information by postverbal indefinite or indeterminate NPs, while Cayuga, Coos and Ngandi do so with sentence-initial NPs.

As discussed in Chapter 3, Bickerton's (1981) Language Bioprogram Hypothesis (LBH) of children's reference competence has been supported by Czikó's (1986) review of a number of studies. The bulk of data is from Indo-European languages, which encode the distinctions between specific and nonspecific reference and between given and new information with definite and indefinite articles. However, little work has been done with other languages such as Chinese which uses word order more systematically than nominal determiners to mark these distinctions: in particular, postverbal position is obligatory for the introduction of referents, while nominal determiners are optional. The LBH, for example, predicts that children acquiring Chinese will acquire these distinctions in the same way and at the same time as children acquiring other languages. Evidence from languages such as Chinese is essential to examine hypotheses and test their predictions about such universals of language acquisition.

More specifically, this study will explore the following:

1. Whether or not young Chinese children are sensitive to the distinctions between specific and nonspecific reference and between given and new information;
2. How they encode these distinctions with linguistic means;
3. Whether or not they encode these distinctions in the same way as adults;

4. Whether or not the acquisition process by Chinese children is similar to that by children acquiring other languages.

4.1 Methods

Longitudinal data have been collected in order to study how young Chinese children acquire the linguistic means necessary for reference¹. Previous studies of the acquisition of Chinese (Erbaugh, 1993; Min & Xu, 1993; Xu, Min, & Chen, 1992; Xu & Min, 1992; Tseng, 1987; Wu & Xu, 1979) claim that children begin to produce one-word utterances between 1;0 and 1;5. The data in this study include children's spontaneous speech at the very beginning of the one-word stage (cf. Brown 1973) so that the acquisition of the reference system can be charted from the earliest phase.

As this study's aim is to obtain very natural and fully contextualized data without imposing any *a priori* theoretical frameworks, the data were collected in a natural setting. In order to obtain as much context information as possible, the author collected almost all the data herself in Beijing². Context notes were also taken at each visit.

Each child was visited at home once a week or once every other week. In most cases, the child, the author, and his/her grandmother³ were present during the session. The child's parents were sometimes present too. The child's parents and grandmother were told that the author was interested in how child language naturally develops. They were instructed to do what they usually did with the child during the session. Before recording, the author, who was familiar to the child, always played with the child for ten to thirty minutes and asked the parents and/or grandparents if they noticed something new in the child's spontaneous production. A thirty-minute audio-tape was recorded during each visit. Each session was conducted in the guest room except for very few cases when the child requested to go outside. The individual bibliographies of the five children are given in the following sections.

4.2 Subjects

The five subjects Mengmeng, Dandan, Maliang, Jiajia, and Duanlian⁴ were at different points ranging followed at from six months to three years and five months. Their ages at the start and end of our visit are given in Table 4.1 below. Two of the children,

¹ The data were collected under the supervision of Zheng-Yuan XU.

² Occasionally when I was absent, children's mothers or grandmothers were asked to take my place.

³ In China children usually start to go to nursery school when they are about three years old. Children younger than three years are often taken care of by their grandparents at home.

⁴ In China, there has been a governmental policy encouraging families to have only one child. All of our subjects are therefore single child.

Mengmeng and Dandan, were younger than one year old at the beginning of our visits.

Table 4.1 The ages of the five children in this study

name	sex	age (start -- end)
Mengmeng	female	0;11 -- 3;5
Dandan	female	0;6 -- 1;11
Maliang	male	1;8 -- 2;3
Jijia	female	2;6 -- 2;11
Duanlian	female	3;1 -- 3;5

4.2.1 Mengmeng (MM)

Mengmeng is the first subject of our study. The first recording was at the age of 11 months, and the last at the age of three years and five months. Her mother is a research assistant and her father is a librarian. The family lives together with her grandmother. She takes care of her during the day before she goes to nursery school. Her grandmother was frequently present during the recordings. Her mother was sometimes present at these sessions, but her father only very rarely.

Before the age of one year and ten months, Mengmeng often played with her toys. Her verbal behavior mainly consisted of the following activities: to learn the names of her family members; to repeat parts of adults' utterances; to name known objects on pictures while adults told her stories; and to learn to count. From the age of one year and ten months on Mengmeng began to narrate stories together with adults from picture books. Adults used to encourage her to tell stories herself as much as she could. They often asked her to continue to tell stories with *wh*-questions such as *What's that?*, *What is he doing?*, *What's going to happen?*. Picture books became more and more important for her to learn labels of new objects and to obtain knowledge of the world in this period. Before the age of two-and-a-half years, Mengmeng mainly talked about things and events in the immediate situation (*here-and-now*). Shortly before her third birthday, she began to talk about what happened in the past (*not-here-and-now*) and recited stories she read or was told. At around the age of three years she could also talk about future events and create simple stories.

Mean length of utterance (hereafter, MLU) has been used as an indicator of language development in previous studies of English (Brown, 1973) as well as in Chinese (Erbaugh, 1982; Zhu & Miao, 1990). It is also used in our study as an indicator of language development in general, especially in order to compare language development among our subjects and in comparison to the children of previous studies.

The age⁵, size (in morphemes and utterances), MLU, and standard deviations (hereafter, SD) in MLU for each of Mengmeng's sessions are given in Table 4.2MM below⁶. Mengmeng's MLUs are comparable to the subjects of the same age in the studies of Erbaugh (1982) and Zhu and Miao (1990).

Table 4.2MM Age, Size, MLU, and SD for each of Mengmeng's Sessions

age	utterances	morphemes	MLU	SD
1;3.16	180	240	1.333	0.587
1;4.5	128	206	1.625	1.090
1;5.30	165	345	2.104	1.135
1;7.9	209	415	1.986	1.200
1;10.13	82	228	2.780	1.675
1;11.12	91	188	2.066	1.184
2;0.0	243	722	2.971	1.797
2;1.13	119	366	3.076	1.450
2;2.27	91	246	2.703	1.866
2;3.6	143	506	3.538	1.928
2;7.3	58	169	2.914	1.764
3;0.5	219	732	3.342	2.571
3;0.11	172	587	3.413	2.217
3;1.10	122	468	3.836	2.559
3;2.3	135	551	4.081	1.951
3;3.4	330	1368	4.145	2.377
3;4.15	331	1392	4.508	2.733

4.2.2 Dandan (DD)

Dandan is also female. We started to visit her when she was about six months old. Her

⁵ Age is given in year;month.day or in year;month.

⁶ One session each month from Mengmeng's corpus and one session every other week from Dandan's, Maliang's, Jiajia's, and Duanlian's corpora, starting at the very beginning of one-word stage, are analyzed in this study. The entire corpora are shown in Appendix I: *Longitudinal Database of Five Mandarin-speaking Children*.

parents began to run their own small company shortly before our first visit. Prior to that, they were working as university assistants. The family lived with the child's grandparents. Her grandmother took care of her during the day. She had a cousin who lived with their family for a few months when she was around one-and-a-half years. Her cousin went to kindergarten during the day and played with her when she came back. Dandan's cousin was present only twice during our visits. Her grandmother was present almost all the time. Her mother was present too, her father only rarely. Dandan often stayed in a walker and played with her toys. Sometimes her grandmother and her mother read children's poetry aloud and expected her to imitate them. The age, size (in utterances and morphemes), MLU, and SD for each of Dandan's sessions are given in Table 4.2DD below.

Table 4.2DD Age, Size, MLU, and SD for each of Dandan's Sessions

age	utterances	morphemes	MLU	SD
1;3.4	122	174	1.426	1.108
1;4.16	104	185	1.779	1.152
1;7.25	197	361	1.832	0.949
1;8.10	125	228	1.824	0.964
1;8.24	125	252	2.016	1.345
1;9.10	83	154	1.855	0.996
1;9.25	177	342	1.932	1.103
1;10.8	297	703	2.367	1.776
1;10.22	272	628	2.309	1.500

4.2.3 Jiajia (JJ)

Jiajia, also female, was two-and-a-half years at the beginning of our first visit. Like Mengmeng and Dandan, Jiajia was taken care of by her grandmother during the day. She began to go to nursery school during the last sessions of our visit. She stayed at home during the days of our visit. Like other children of her age, she had many toys and many children's picture books. During the period of our visit, she was interested in reading picture books and telling stories, and in playing with toy-bricks to build up

gardens⁷. As shown in Table 4.2JJ, Jiajia produced more utterances than the other children of her age at each session; however, her overall MLUs are comparable. She started to talk about past events and things not-here-and-now at about two years and ten months, although most of her verbal behavior was tied to non-linguistic context. The age, size (in utterances and morphemes), MLU and SD for each of Jiajia's sessions are given in Table 4.2JJ below.

Table 4.2JJ Age, Size, MLU, and SD for each of Jiajia's Sessions

age	utterances	morphemes	MLU	SD
2;6.8	167	506	3.030	1.796
2;6.22	302	1110	3.675	2.088
2;7.0	249	705	2.831	1.725
2;7.19	270	1135	4.204	2.439
2;8.3	231	851	3.684	1.828
2;8.17	379	1508	4.174	2.098
2;9.11	368	1254	3.383	1.970
2;10.5	308	1120	3.636	2.087
2;10.13	334	1171	3.506	1.911

4.2.4 Duanlian (DL)

Our fourth subject was a girl called Duanlian. She was going to kindergarten regularly during the daytime for the entire period of our visits. Unlike the other children, she lives only with her parents. She used to go to her grandparents regularly during the weekend. Our taping was done there. She had as many toys and picture books there as she had at home. She could recite *Wǔjué*⁸ and *Wǔlǚ* poems, and told stories which she had heard in the kindergarten. She also talked about her kindergarten friends and activities (not

⁷ She also had a picture book in English, a gift from an American visitor. When she told the story from this book, in Chinese of course, she sometimes started with the English sentence 'long long ago', then continued it in Chinese each time. Other than this phrase, she had not learned any English. Her parents and grandparents used to talk to her and to each other in Chinese. Therefore, she has a native Mandarin-speaker environment.

⁸ *Wǔjué* is a kind of poem consisting of four lines. Each line consists of five Chinese characters. *Wǔlǚ* is a kind of poem consisting of eight lines. Each line consists of five Chinese characters. Both types of poem consist of a strict pattern and rhyme scheme.

here-and-now). Table 4.2DL below shows Duanlian's overall language development, indicated by size (in utterances and morphemes) and MLU.

Table 4.2DL Age, Size, MLU, and SD for each of Duanlian's Sessions

age	utterances	morphemes	MLU	SD
3;1.20	95	315	3.316	1.865
3;2.48	224	896	4.000	2.407
3;2.11	119	434	3.647	2.281
3;3.1	184	689	3.745	2.143
3;3.15	72	248	3.444	2.088
3;3.28	468	2140	4.573	2.397
3;4.12	266	985	3.703	2.461
3;4.27	283	1113	3.933	2.259
3;5.4	87	372	4.276	2.835

4.2.5 Maliang (ML)

Maliang is the only child for whom a corpus already existed by the time I began my research⁹. Maliang is the only male subject in this study. Maliang's father is a taxi driver and his mother is a laboratorian. He is taken care of by a female neighbor of his grandmother's age whom he calls "granny". He could distinguish different kinds of cars and trucks which children usually do not distinguish at his age. This ability may be a result of his father being a driver. In other aspects of language development, he was at the same level as other children in the corpus except that he reversed first and second person pronouns at the age between 1;7 and 2;0 (Min & Xu, 1993; Xu & Min, 1992). This pattern emerged alongside with the correct usage. He likes to play games. His verbal behavior was mostly about the *here-and-now*. The age, size, MLU, and SD for each of Maliang's sessions are given in Table 4.2ML below.

⁹ The Maliang corpus was collected by Zhengyuan XU. I am very grateful for her allowing me to use these data.

Table 4.2ML Age, Size, MLU, and SD for each of Maliang's Sessions

age	utterances	morphemes	MLU	SD
1;8.13	176	367	2.097	0.946
1;8.26	125	245	1.960	1.880
1;9.11	89	228	2.562	1.161
1;10.10	116	273	2.353	1.302
1;10.28	23	45	1.957	0.751
1;11.13	84	187	2.226	1.199
2;0.4	49	125	2.551	1.310
2;0.20	93	217	2.333	1.081
2;2.10	29	94	3.241	1.072

4.3 Analysis methods

4.3.1 Formatting

All utterances of both the child and adults, as well as context information, were first transcribed by the author into Chinese characters. The transcripts were then checked by undergraduates in the Child Psychology Laboratory of Peking University. The written Chinese transcripts were then transcribed into Pinyin¹⁰ by the author and checked by a native Mandarin Chinese speaker. In this thesis, two types of translation in English are provided for all examples from the transcripts. In the line immediately below the example, we attempt to gloss each Mandarin element with literal English equivalents. In the second line below the example, we give free translation. The Pinyin version of the data are in a CHAT (i.e., Codes for the Human Analysis of Transcripts) compatible format, the standard transcription system for the CHILDES (CHIld Language Data Exchange System) (MacWhinney & Snow, 1990; MacWhinney, 1991). A CHAT formatted data file consists of *a main line* for children's spontaneous utterance and one or more *dependent tier lines* below the main line for codes which may be specified by researchers according to their purpose. Dependent tiers contain codes, comments, and other information of interest to the researcher (details see 5.3.3). Intonation and stress

¹⁰ Pinyin is the official system used to transcribe Chinese into the Roman alphabet in People's Republic of China.

are also transcribed by means of the conventions from CHAT, which are also listed under "Conventions used in the transcriptions" at the very beginning of this thesis.

4.3.2 Coding

Each referring expression used by the children to refer to referents other than the speaker and the addressee¹¹ is coded in a dependent tier line in terms of a multi-layered coding scheme consisting of the following dimensions: forms, first versus subsequent mentions, reference situations, verbal positions and animacy¹².

A. FORMS

Referring expressions fall into different formal NP categories (e.g., nominals, pronominals, and zero forms), corresponding to different semantic distinctions and different assumptions on the part of the speaker concerning the listener's knowledge about the referent in discourse. It is well known that young children at the one-word stage are limited in their use of NP types. Most of the NPs during this period are bare nouns. Children begin to use a variety of other NPs, e.g., demonstrative pronouns, nominals with determiners, etc., during the second half of their second year. Children's development of NP types is an important achievement, allowing children to explore their functions (Behrens, 1993; Bowerman, 1989). However, some new forms used by children at the early phases can take on old functions (Slobin, 1973).

In order to find out the relation between NP forms and their functions, all referential NPs were formally distinguished into ten subcategories, shown in (1). Corresponding examples are also given in (1).

¹¹ Information about the acquisition of referring expressions used to refer to the speaker and the addressee can be found in Min and Xu (1993) and Xu and Min (1992).

¹² Some of these codes are adopted from Hickmann's coding manual, especially with respect to the coding of Chinese data (Hickmann, 1990).

(1)

**SUBCATEGORIES OF NPS
(CODES)**
EXAMPLES

 Nominals with indefinite (numeral)
determiners and classifiers
(NUMCLNOM);

yī-zhī yáng 'a sheep'
yī-ge bēizi 'a cup'

 Nominals with demonstrative determiners
and classifiers
(DEMCLNOM),

zhè-zhī tùzi 'this hare'
zhè-xiē qīngwā 'these frogs'

 Bare nominals
(NOM),

māo 'a cat/cats'
xiǎo māo 'a little cat/little cats'

 Nominals with possessives
(POSNOM),

wǒ-de wánjù 'my toy(s)'
tā-de wáwa 'his doll(s)'

 Kinship terms (without any determiners)
(KIN),

māma 'mother'
shūshu 'uncle'

 Other nominals (including DE-construction)
(OTHERNOM),

hóng-de 'red one'
chuān hóng yīfú de
'one wearing red clothes'

 Third Person pronouns
(PRO3),

tā 'he/she/it'
tā-men 'they/them'

 Interrogative pronouns
(PRODEM),

shénme 'what'
shéi 'who'

 Demonstrative pronouns
(DEM),

zhè-xiē 'these (ones)'
nà 'that'

 Zero forms
(ZERO)¹³
 \emptyset *diào le* 'ø fell'

¹³ In Chinese, there are two types of zero forms. One is grammatically controlled whereas the other is not, we call the latter pragmatically controlled zero forms. An example of a grammatically controlled zero form is shown in (a) below.

- (a) $W\delta_1$ $yào$ \emptyset_1 $ch\bar{i}$ $p\acute{i}nggu\check{o}$.
 Ip want eat apple
 I want to eat apples

The grammatical zero form \emptyset_1 cannot be replaced by overt lexical forms. A pragmatic zero form refers to the situation in which there is a syntactic 'hole' in the sentence, where referents are not explicitly mentioned but can be recovered from the preceding context or situational information and may be replaced by a nominal or pronominal expression that refers to the same entity in the context. An example of a pragmatic zero form, \emptyset_2 , is given in (b) below, where \emptyset_2 can be replaced by *tā* 'he'.

- (b) $Xi\check{a}o$ $t\grave{u}$ $z\check{o}u$ $d\grave{a}o$ le $l\acute{i}nzi$ -l\acute{i},
 little hare walk at LE forest,
 The little hare goes into the forest.

B. REFERENCE SITUATION

Each referring expression has been coded according to the following categories. nonspecific reference, specific reference to given information, or specific reference to new information, as well as whether or not the denoted referent is in the non-linguistic context. A few cases of ambiguous reference, i.e., where more than one referent fits an NP, were also found in our data. These cases were coded into a separate category. The codes are shown in (2).

- (2) a. **RNSPE** nonspecific reference
RNEW specific new reference
RMUK specific given (mutually known) reference
RAMB ambiguous reference
- b. **RVS** referents present and visually available in the non-linguistic context
RNVS referents not present and visually available in the non-linguistic context

C. FIRST VERSUS SUBSEQUENT MENTIONS

As defined in Chapter 2, the first mention of a referent refers to its first appearance, irrespective of its status in discourse. Subsequent mentions of a referent correspond to its subsequent appearances in discourse. In this study, two codes are given in terms of first and subsequent mentions, namely, FM and SM, shown in (3)

- (3) **FM** cases where children initiate talk about a referent for the first time, i.e., not previously mentioned in preceding discourse
SM subsequent mentions of referents previously mentioned in discourse

With subsequent mentions, the distance between the current and last mentions of the referent is one of the main factors affecting the speaker's choice of anaphoric forms. We will investigate below how young children develop cohesive discourse, including whether or not they are sensitive to referential distance on subsequent mention. With respect to the distance among subsequent mentions, two codes further distinguish

\emptyset_2	yòu	kàn-jiàn	hǎoduō	sōngshǔ
\emptyset	again	see-ASP	many	squirrel

(He) sees many squirrels too.

In the present study only pragmatic zero forms are analyzed

situations as a function of local coreference, as shown in (4) below.

- (4) **RCC** subsequent mentions in cases where the most recent mention is in the immediately preceding utterance (hereafter *coreferential context*)
RNC subsequent mentions in cases where the most recent mention is not in the immediately preceding utterance (hereafter *non-coreferential context*)

D. NP POSITION IN RELATION TO THE VERB

Preverbal versus postverbal position is a linguistic device coding information status. Thus, position was coded for every NP in order to examine whether or not children are able to use this device to differentiate between given and new information, as shown in (5). Since utterances of the type *N1 N2 V* were very rare, N1 and N2 in preverbal position were collapsed into one single PREV category.

- (5) **PREV** NPs in preverbal position
PSTV NPs in postverbal position

Additional codes were designed for some special structures, typically used to introduce referents in discourse: 1) the code EXIS identifies existential constructions (e.g., *you ge xiao yang*, 'there is a little sheep'); 2) spontaneous and elicited labellings, i.e., cases where adults get children to name a referent for the first time, by using questions such as *Zhe shi shenme* 'What's this?'. Two types of labellings are coded: a) the code EXDEM identifies explicit labellings in full demonstrative predicating constructions (e.g., *Zhe shi xiao yang* 'This is a little sheep'); b) the code PRED identifies labellings in elliptical (verbless) utterances, with special attention to cases where they were elicited by adult questions for first mentions (FMA:PRED). The relevant distinctions are shown in (6):

- (6) **EXIS** NPs in existential constructions
EXDEM labellings in explicit demonstrative predicating constructions
PRED spontaneous verbless labellings
FMA:PRED NPs used for the first mention of referents in verbless labellings elicited by adult questions.

E. ANIMACY

In some functional approaches the principle of Animated First is suggested to shape the grammars of the languages of the world (Tomlin, 1986). The basic claim of this principle is that an NP in a transitive clause precedes other NPs if it ranks higher on the

animacy hierarchy than other NPs (all other things being equal).

(7) The Animated First Principle (Tomlin, 1986:102):

in simple basic transitive clauses, the NP which is most animated will precede Nps which are less animated.

One common way to segment the animacy hierarchy from most to least is shown in (8) below:

(8) human > other animate > inanimate

Language acquisition data show that animacy is important to young children in constructing sentences. At the two-word stage both of the Finnish children examined by Bowerman (1973) and the English children examined by Brown (1973) and Ervin-Tripp (1971) show strong preferences for animate subjects (or actor being sentence initial) and inanimate objects. Erbaugh (1992) also found that young Chinese children had a rigid SVO stage, mainly expressing events of the type *agent-act-on-patient* involving animate agents and inanimate patients.

Our hypothesis is that young Chinese children also use the Animated First Principle to construct sentences at the early stages. That is, they first use this rule, regardless of whether they introduce new referents or maintain reference to the entities in discourse (e.g., using preverbal NPs when referents are human or animate). The rule reserving postverbal NPs for new information will be acquired at a later stage. Animacy has also been coded as in (9) so that this hypothesis may be tested.

(9)	HUM	human
	ANI	other animate
	INA	inanimate

4.3.3 Analysis

The corpora of the five children have been grouped chronologically such that the sessions of every three months constitute one *age phase*. Thus, the age span (across all subjects) from 1;3 to 3;6 has been divided into 9 age phases. As shown in Table 4.3 below, each age phase therefore contains several sessions, ranging from 1 to 6.

Table 4.3 Age phases and number of sessions in each across all subjects

Age Phase	age	MM	DD	ML	JJ	DL
1	1;3.0-1;5.30	3	2	-	-	-
2	1;6.0-1;8.30	1	3	2	-	-
3	1;9.0-1.11.30	2	4	4	-	-
4	2;0.0-2;2.30	3	-	3	-	-
5	2;3.0-2;5.30	1	-	-	-	-
6	2;6.0-2;8.30	1	-	-	6	-
7	2;9.0-2;11.30	-	-	-	3	-
8	3;0.0-3;2.30	4	-	-	-	3
9	3;3.0-3;5.4	3	-	-	-	6

4.3.4 An example

Example (10) illustrates the coding of the data. The second utterance in (10) below consists of three referring expressions, i.e., *tā* '3p', *xiǎo gūniang* 'little girl', and *yī-duǒ huā* 'one-CL flower'. Three dependent tiers (containing codes, see list of *Abbreviations used in the tables, in the texts and in the coded files* given in the every beginning of this thesis) are given: %rf1 for *tā* '3p', %rf2 for *xiǎo gūniang* 'little girl', and %rf3 for *yī-duǒ huā* 'one-CL flower'. Each of the three referring expressions is coded in terms of form (e.g., PRO3, NOM, and NUMCLNOM), in terms of first versus subsequent mentions (e.g., FM for *yī-duǒ huā* 'one-CL flower' and SM for *tā* '3p' and *xiǎo gūniang* 'little girl'), in terms of animacy (e.g., HUM for *tā* '3p' and *xiǎo gūniang* 'little girl', and INA for *yī-duǒ huā* 'one-CL flower'), in terms of visibility (e.g., RVS for all the three referring expressions), in terms of coreferential versus non-coreferential contexts for subsequent mentions (e.g., RCC for *tā* '3p' and RNC *xiǎo gūniang* 'little girl'), and in terms of NP positions in relation to the verb (e.g., PREV for *tā* '3p', and PSTV for *xiǎo gūniang* 'little girl' and *yī-duǒ huā* 'one-CL flower'). Code boundary is defined as a colon.

- (10) [CHI read a picture book. *Xiǎo gūniang* 'little girl' in the second utterance has been mentioned already.]

*CHI: Lái le yī-wèi lǎo bóbo.
 come LE one-CL old uncle
 An old man came.

*CHI: Tā gěi le xiǎo gūniang yī-duǒ huā.
 3p give LE little girl one-CL flower
 He gave the little girl a flower.
 %rf1: PRO3:SM:RCC:HUM:RVS:PREV:tā
 %rf2: NOM:SM:RNC:HUM:RVS:PSTV:xiǎo+gūniang
 %rf3: NUMCLNOM:FM:RNEW:INA:RVS:PSTV:yī-duǒ+huā

The CLAN (Computerized Language Analysis) programs are a set of computer programs designed to perform automatic analyses on transcript data, especially when the data have been transcribed according to the CHAT coding conventions. More details about both CHAT and CLAN can be found in The CHILDES Project (MacWhinney, 1991). For example, **FREQ** can provide frequency of the code **PRO3** in the sessions. **COMBO** performs Boolean searching (combinatorial pattern-matching) on text as well as coded lines. NPs coded as **FM** or **SM** in each session (or each age phase), or NPs of **FM** or **SM** that are coded as **PREV**, **PSTV**, or **PRED** can be extracted from the coded files by using **COMBO**. **FREQ** can then provide the frequency of the matched patterns. For example, using **COMBO** and then **FREQ**, the frequency of **NUMCLNOM** used for **FM**, the frequency of **NUMCLNOM** used on **FM** and with **PSTV**, and all other combinations can be obtained. The CLAN programs have been used to analyze our data. The results will be discussed in Chapters 5, 6, and 7.

5 Children's Marking of Specific versus Nonspecific Reference

5.0 Introduction

In the above chapters, a distinction was made between specific and nonspecific reference. Specific reference can be further differentiated into reference to given versus new entities, and nonspecific reference can be differentiated into nonspecific-potential reference and other uses (e.g., generic). As mentioned in Chapter 3, many previous studies examined experimentally how young children mark nonspecific reference in relation to a nonspecific entity extracted from a given set of entities of the same class and they have examined specific reference in relation to a particular entity (Maratsos, 1974, 1976; Karmiloff-Smith, 1979; Warden, 1976, 1981).

This chapter will investigate children's use of referring expressions in natural conversational data, with particular attention to children's acquisition of the distinction between specific and nonspecific reference. Chapters 6 and 7 will then examine how children learn to introduce referents and to maintain reference to them in discourse.

5.1 Forms of referring expressions

Referring expressions were first analyzed in terms of their forms, regardless of whether they were used for specific versus nonspecific reference. Tables 5.1a and 5.1b show the distribution of the following forms by age phase: num-cl-N includes nominals with numeral determiners and classifiers, as well as a few nominals with only classifiers (numeral determiners with the singular form *yī* 'one' being optional); dem-cl-N includes nominals with demonstrative determiners and classifiers; bare-N includes nouns with and without modifying adjectives, which were mostly *xiǎo* 'little' and *dà* 'big' in young children's productions; pos-N includes nominals with possessives; KIN includes kinship terms without determiners and possessives; other-N includes all nouns which are not

included in the previous categories such as DE-constructions (nominalizations¹) and a few cases of nouns with relative clauses for children beyond 2;6; p-PRO includes third person pronouns; d-PRO includes demonstrative pronouns, e.g., *zhè/nèi* 'this/that', *zhè-ge/nèi-ge* 'this one/that one'; ZERO is coded where utterances consist of a verb with its argument(s) omitted because they are obvious from non-linguistic and/or previous linguistic contexts. As shown in these tables and as described in detail below, the uses of different forms varied across age phases and children. However, note that all types of NPs occurred at Age Phase 4 for all children.

First, the most frequently used type of NPs across subjects and sessions was bare nominals (bare-N)². Bare nominals used by Mengmeng decreased rapidly from Age Phase 1 (72%) to Age Phase 3 (34%), due to the occurrences of other types of NPs. The frequencies of bare nouns oscillated between 24% and 44% after Age Phase 4. Bare nouns were also among the most frequently used NPs by Dandan. In comparison to Mengmeng, she did not show a rapid decrease in the use of bare nouns: between 34% and 56% of referring expressions were of this type. Bare nominals were also the most frequently used NPs for Maliang, Jiajia, and Duanlian. The frequencies varied, vacillating between 21% and 45% for Maliang, between 26% and 38% for Jiajia, and between 24% and 33% for Duanlian.

Second, zero forms also occurred frequently (across all children). However, the frequency of zero forms varied: between 15% and 33% of referring expressions were of this type for Mengmeng; between 27% and 40% for Dandan; between 29% and 43% for Maliang; between 22% and 26% for Jiajia; and between 18% and 28% for Duanlian.

Third, nominals with numeral determiners and classifiers only occasionally occurred for Dandan and Maliang. The use of this type of NP was not frequent for other children at all age phases³ (less than 6% for all children at all age phases). Its use increased with age, although slowly.

¹ Nominalizations are cases where modifiers are transformed to NPs by means of the particle DE, e.g. the NP *lán de jīmù* versus *lán-de* shown below. All nominalizations were included in the other-N category, with no distinction between nominals or pronominals.

lán	de	jīmù	versus	lán-de
blue	DE	toy-bricks		blue-DE
blue toy bricks				blue ones

² Before the age of one-and-a-half years, bare nominals mainly consist of bare nouns, i.e., nouns without any modifiers.

³ Previous studies in Chinese (Chao, 1951, Chang, 1993) found that the first appearance of classifiers for their subjects was the generic classifier *-ge* at around the age of two years.

Table 5.1a Forms of referring expressions in each of Mengmeng's (MM) sessions

Child	Age Phase	Total (no.)	num-cl-N (%)	dem-cl-N (%)	bare-N (%)	pos-N (%)	KIN (%)	other-N (%)	d-PRO (%)	p-PRO (%)	ZERO (%)
MM	1	196	2	0	72	1	7	2	2	0	15
MM	2	85	0	0	53	1	2	7	4	0	33
MM	3	139	3	1	34	4	17	12	1	0	27
MM	4	417	2	2	42	5	5	9	3	4	27
MM	5	119	2	3	28	8	2	17	11	3	28
MM	6	57	2	4	44	0	9	14	12	2	14
MM	7	-	-	-	-	-	-	-	-	-	-
MM	8	506	3	5	28	5	6	19	4	7	24
MM	9	608	5	3	32	3	9	7	5	6	30

Table 5.1b Forms of referring expressions in each of Dandan's (DD), Maliang's (ML), Jijia's (JJ), and Duanlian's (DL) sessions

Child	Age Phase	Total (no.)	num-cl-N (%)	dem-cl-N (%)	bare-N (%)	pos-N (%)	KIN (%)	other-N (%)	d-PRO (%)	p-PRO (%)	ZERO (%)
DD	1	30	0	4	34	0	20	7	6	0	30
DD	2	231	1	1	34	1	13	7	3	0	40
DD	3	215	0	0	56	1	3	9	3	1	27
ML	2	249	0	1	43	1	10	2	0	1	43
ML	3	257	1	1	45	4	13	8	1	1	29
ML	4	116	0	0	21	3	28	10	7	3	30
JJ	6	1334	2	4	26	6	7	12	4	13	26
JJ	7	801	2	5	38	3	9	10	2	10	22
DL	8	246	6	4	24	13	8	6	7	3	28
DL	9	862	6	4	33	6	10	11	4	8	18

Fourth, nominals with demonstrative determiners and classifiers occurred at Age Phase 3 for Mengmeng, at Age Phase 1 for Dandan, and at Age Phase 2 for Maliang. As mentioned above, all types of NPs occurred in the corpora of Jijia and Duanlian during the first visit, including nominals with demonstrative determiners and classifiers. However, the use of nominals with demonstrative determiners and classifiers was not frequent (less than 5% for all children at all age phases).

Fifth, nominals with possessives occurred at Age Phase 1 for Mengmeng, at Age Phase 2 for Maliang and at Age Phase 2 for Dandan. Nominals with possessives were used by Jijia and Duanlian during the first visit. The frequencies varied from one age to another: between 0% and 8% of referring expressions were nominals with possessives for Mengmeng, between 0% and 1% for Dandan, between 1% and 4% for Maliang, between 3% and 6% for Jijia, and between 6% and 13% for Duanlian.

Kinship terms without possessives or determiners were used by our subjects to refer to their relatives as well as to other people, e.g., *shūshu* 'uncle' for people in their father's age. Their frequencies varied across children: between 2% and 17% of referring expressions were kinship terms for Mengmeng, between 3% and 20% for Dandan, between 10% and 28% for Maliang, between 7% and 9% for Jijia, and between 8% and 10% for Duanlian.

Other-nominals mainly consisted of DE-constructions for children under Age Phase 4 and of a few relative clauses for children from Age Phase 4 on. Their uses varied across ages: between 2% and 19% of referring expressions were of this type of NPs for Mengmeng, between 7% and 9% for Dandan, between 2% and 10% for Maliang, between 10 and 12% for Jijia, and between 6% and 11% for Duanlian.

Deictic pronouns were used by Mengmeng at Age Phases 5 and 6 (11% at Age Phase 5 and 12% at Age Phase 6). These uses increased with age before Age Phase 5 and decreased after Age Phase 6. The frequencies of deictic pronouns used by the other children were all under 7% and varied with age: between 3% and 6% of referring expressions were deictic pronouns for Dandan, between 0% and 7% for Maliang, between 2% and 4% for Jijia, and between 4% and 7% for Duanlian.

Third person pronouns occurred relatively late in comparison to other types of NPs. Dandan began to use this type of NP at Age Phase 3. Only 1% of referring expressions were third person pronouns. Mengmeng began to use these NPs at Age Phase 4, and their frequencies increased with age, up to 7% at around Age Phase 9. Third person pronouns occurred infrequently in Maliang's data: only 1% of referring expressions were of this type at Age Phase 2, 1% at Age Phase 3 and 3% at Age Phase 4; Jijia used more third person pronouns than other children: 13% referring expressions were of this type at Age Phase 6 and 10% at Age Phase 7. The frequencies of third person pronouns used by Duanlian were 3% at Age Phase 8 and 8% at Age Phase 9.

5.2 Children's marking of nonspecific versus specific reference

In the following, we examine the forms of referring expressions used for specific versus nonspecific reference. For most of the referring expressions in our corpora it was not difficult to differentiate between specific and nonspecific reference. However, there were some cases of nominals used for labellings, typically in elliptical utterances. These labellings were either initiated by the child or they were produced in answer to an adult question, typically *Zhè shì shénme?* 'What is this?', but also utterances such as *Shéi zài pǎo?* 'Who's running' and *Něi-ge dà?* 'Which one is big?'. For example, Dandan spontaneously uttered *jī* 'chicken' (1;9.25) while looking at a picture book and uttered *xié* 'shoe' (1;4.16) in answer to her mother's question *Zhè shì shénme?* 'What is this?' as they are looking at pictures. These nominals can be interpreted as attributing class-membership to presupposed referents. They were therefore treated as involving specific reference, particularly when they were spontaneously produced by the child. When they were elicited by the adult, they were included in a separate category, hereafter *other-reference*⁴.

Note that, when adults asked questions such as *Zhè shì shénme?* 'What is this?' to request labellings, the subsequent utterances in the conversation differed depending on the age phase of the children. Under Age Phase 3 children responded with a labelling which was usually not followed by a stretch of conversation about the named object. In comparison, when the same type of question was addressed to children above Age Phase 3, they typically answered the question and then continued talking about the named object themselves or adults encouraged them to extend the conversation about it with questions such as *Tā zài gàn shénme?* 'What is he/she/it up to?' Alternatively, children above Age Phase 3 sometimes did not respond to the question *Zhè shì shénme?* 'What is this?' directly, i.e., did not label the referent, but rather they began to say something about it. For example, Jiajia and her father were reading a book together. Her father asked *Zhè shì shénme ya-?* 'What is this?' (without pointing to any particular object on the picture). Jiajia did not answer the question, but rather she said *Zhè bānmǎ <hái> [//] # nòng jīdàn chí* 'This zebra ate eggs' (2;9.11). Referring expressions such as *Zhè bānmǎ* 'this zebra' in such cases were included among cases of specific reference, since they did not constitute labellings despite the adult's question.

Table 5.2 shows the overall frequencies and percentages of all NPs used for

⁴Since this additional category called here *other-reference* only contains cases where adults elicited labellings, these cases will not be included in subsequent analyses of referent introductions (Chapter 6) and of reference maintenance (Chapter 7). A few other cases of NPs were excluded from the analysis entirely, e.g., NPs used for "drilling", such as a few instances where MIM's grandmother elicited repetitions of words from the child in the absence of any relevant referents (Grandmother: *Nǐ shuō gǒu.* 'You say dog' Mengmeng: *Gǒu* 'Dog')

specific reference, nonspecific reference, and other-reference for five children. As shown in this table, the majority of NPs were used for specific reference by all children (collapsing across all age phases, the percentages range from 66% to 94%). Furthermore, this predominance of specific reference can be observed at all age phases of all children. In comparison, other uses are less frequent and more variable across age phases and children. Among them, cases of other-reference tend to be slightly more frequent than cases of nonspecific reference. However, this difference is much more striking at early age phases: in particular, other-reference is clearly more frequent than nonspecific reference during age phases 1 to 5 (collapsing across children the percentages vary between 15% and 29%) in comparison to later age phases (varying between 3% and 7%). Finally, cases of nonspecific reference were least frequent overall, although a substantial number of such cases can be attested, particularly with Mengmeng, Maliang and Duanlian. In summary, then, all children mostly denoted specific referents, and occasionally used NPs for nonspecific reference at all age phases, while also labelling referents in answer to adults' questions during early phases.

Table 5.2 Overall frequencies of all referring expressions used for specific reference, nonspecific reference, and other-reference for five children

Age Phase	Total (no.)	Specific reference (%)	Nonspecific reference (%)	Other-reference (%)
1	200	70	1	29
2	392	80	2	18
3	439	70	10	20
4	378	77	5	18
5	87	79	6	15
6	1280	93	3	3
7	694	94	3	3
8	648	88	5	7
9	1333	86	10	4

Tables 5.3a, 5.3b, and 5.3c show the types of NPs used by our subjects for nonspecific reference, specific reference, or other-reference, respectively. In these tables, the first column gives the age. In the column corresponding to each type of NP, we give the abbreviated names of the children who used that type of NP. Some types of NPs occurred earlier and some later, and only Jijia (JJ) and Duanlian (DL) used all types of NPs at all age phases. In addition, we indicate the *first* occurrence of each type of NP

used by Mengmeng (MM), Dandan (DD), and Maliang (ML) by means of underlining of the abbreviated names, e.g., MM. However, not all types of NPs were used for all three reference situations on the first occurrence. Thus, the abbreviated name underlined and placed WITHIN PARENTHESES, e.g., (MM), indicates the first occurrence of that type of NP at that age phase in cases when it was not used for the relevant reference situation.

Table 5.3a summarizes the referring expressions used for nonspecific reference by all subjects. First, although nominals with demonstrative determiners and classifiers occurred at Age Phase 3 for Mengmeng, at Age Phase 1 for Dandan, and at Age Phase 2 for Maliang, as well as for Jiajia and Duanlian, they were never used for nonspecific reference by any of the children. Similarly, nominals with possessives, deictic pronouns, third person pronouns and zero forms were never used for nonspecific reference by any of the children. Nominals with numeral determiners and classifiers, bare nouns, kinship terms, and other-nominals mainly consisting of DE-constructions were used for nonspecific reference by all five children.

Among these NPs, bare nominals were the most frequently used type of NPs for nonspecific reference.

Table 5.3b summarizes the referring expressions used for specific reference by the children. In contrast to the uses of NPs for nonspecific reference, all types of NPs were used by our subjects for specific reference. In addition, the first occurrences of nominals with numeral determiners and/or classifiers were used for nonspecific reference by the three youngest children, i.e., Mengmeng, Dandan, and Maliang. The uses of nominals with numeral determiners and/or classifiers for specific reference developed a little bit later.

Table 5.3c shows the referring expressions used for other-reference. Recall that these NP types were used to respond to adults' questions which mainly included question types such as *Zhè shì shénme?* 'What's this?', *Gǒu zài nǎr?* 'Where is the dog?', and *Qíú, nǐ gěi shéi?* 'To whom did give you the ball?' in the earlier phases, as well as *Něi-ge dà?* 'Which is bigger?' and *Xīn yīfu shì shéide* 'To whom do the new clothes belong?' in the later phases. Children's choices of NPs in answer to particular questions depended on the question types as well as other factors (e.g., the number of potential referents). In general, bare nominals were mostly common in answer to *Zhè shì shénme?* 'What is this?', deictic pronouns in answer to *Which* and *Where*-questions when referents were in the here-and-now, and nominals with possessives in answer to *Whose*-questions. In the following discussion, we leave the category of *other-reference* aside, focusing on the uses included in Tables 5.3a (nonspecific reference) and 5.3b (specific reference).

Table 5.3a Forms of referring expressions used for nonspecific reference

Age Phase	num-cl-N	dem-cl-N	bare-N	KIN	pos-N	other-N	d-PRO	p-PRO	ZERO
1	<u>MM</u>	<u>(DD)</u>	<u>MM</u>	<u>MM</u> <u>DD</u>	<u>(MM)</u>	<u>(MM)</u> <u>(DD)</u>	<u>(MM)</u> <u>(DD)</u>	-	<u>(MM)</u> <u>(DD)</u>
2	<u>DD</u>	<u>(ML)</u>	<u>MM</u> <u>ML</u>	MM DD ML	<u>(DD)</u> <u>(ML)</u>	<u>(ML)</u>	<u>(DD)</u>	<u>(ML)</u>	<u>(ML)</u>
3	MM <u>ML</u>	<u>(MM)</u>	MM ML	MM DD ML	-	MM		<u>(MM)</u>	-
4	MM	-	MM ML	MM ML	-	-	<u>(ML)</u>	-	-
5	MM	-	MM	MM	-	MM	-	-	-
6	JJ	-	MM JJ	MM JJ	-	JJ	-	-	-
7	JJ	-	JJ	JJ	-	JJ	-	-	-
8	MM DL	-	MM DL	MM DL	-	MM	-	-	-
9	MM DL	-	MM DL	MM DL	-	MM DL	-	-	-

Table 5.3c Forms of referring expressions used for the other-reference group

Age Phase	num-cl-N	dem-cl-N	bare-N	KIN	pos-N	other-N	d-PRO	p-PRO	ZERO
1	(MM)	(DD)	MM DD	MM (DD)	(MM)	MM (DD)	MM DD	-	(MM) (DD)
2	DD		MM DD ML	DD ML	DD ML	MM (ML)	MM DD ML	(ML)	(ML)
3	MM	(MM) (ML)	MM DD ML	MM ML	.	MM	MM DD ML	-	-
4	MM (ML)	MM	MM ML	ML	MM	-	MM ML	(MM)	-
5	-	-	MM	-	-	-	MM	-	-
6	-	MM	MM JJ	JJ	MM JJ	MM JJ	JJ	JJ	-
7	-	-	JJ	-	JJ	-	JJ	-	-
8	-	DL	MM DL	MM	DL	MM	-	-	-
9	DL	DL	MM DL	MM DL	MM DL	MM DL	-	-	-

In general, children differentiated definite NPs from other NPs. Definite NPs were reserved for specific reference. In contrast, other NPs (nominals with numeral determiners and/or classifiers, bare nouns, kinship terms, and other-nominals) were used for both nonspecific and specific reference. In addition, nominals with numeral determiners and/or classifiers were first used for nonspecific reference, then for specific reference. These findings are described and illustrated in detail below. In particular, since four types of NPs were used for both specific and nonspecific reference, we examine whether they were used appropriately in order to determine whether or not Chinese children differentiate specific and nonspecific reference as early as three-and-a-half years, as suggested by Brown (1973) and Maratsos (1974, 1976) for English.

5.2.1 Referring expressions used for nonspecific reference

(1) Nonspecific-potential reference

Nonspecific-potential reference is involved when an NP is used for nonspecific reference in a context where specific reference is expected to be actually instantiated in the very near future. That is, although reference is nonspecific, there is a strong expectation that a specific referent will be selected as a result of the utterance. There were two such contexts, illustrated in detail below. First, children sometimes drew for fun with no particular plan in mind as to what to draw or constructed objects and/or asked the adult to do so. In these cases, the NPs involve nonspecific reference, i.e., children talk about nonexistent entities, but these entities are about to come into existence. Such cases occurred with a small class of verbs such as *hua* 'draw', *xie* 'write/draw', *da* 'build', *die* 'fold'. Second, children also used nonspecific NPs when requesting something from adults. These requests either involved unspecified entities in the absence of any particular relevant referent or the extraction of an unspecified entity or group of entities from a given set of referents.

Our subjects used bare nominals for nonspecific-potential reference, as well as other types of NPs, i.e., nominals with numeral determiners and/or classifiers, nominalizations, and kinship terms without possessives. The uses of these types of NPs by our subjects are illustrated below.

A. Examples of bare nominals for nonspecific-potential reference

First, bare nominals were used for nonexistent entities that children were going to construct or asked the addressee to construct, e.g., (1) and (2).

(1) Age of ML: 1;10.10

[ML had a pencil in his hand. He was going to draw. *dà jípǔchē* was used to refer to a potential jeep he was going to draw.]⁵

CHI: Ø huà dà jípǔchē.
 Ø draw big jeep
 I draw a big jeep.

(2) Age of JJ: 2;6.22

[JJ asked EXP to build a garden.]

CHI: Ayí dā dàguānyuán.
 aunt build garden
 Aunt build a garden.

Second, bare nominals were used for nonspecific reference in contexts where the child was looking for and/or requested unspecified objects, e.g., (3) to (5).

(3) Age of MM: 1;11.12

ADU: Nǐ zhǎo shénme?
 2p look-for what
 What are you looking for?

CHI: Wáwa.
 doll
 Dolls.

(4) Age of ML: 1;8.26

[ML had a pencil in his hand and he wanted some paper to draw. There was no paper in the immediate situation.]

CHI: Ø yào zhǐ.
 Ø want paper
 I want paper.

⁵All conventions used for the examples are borrowed from CHAT in CHILDES (MacWhinney, 1991). They are listed at the beginning of the thesis.

(5) Age of DD: 1;8.24

[After having played a while, DD wanted something to drink. There was nothing to drink in the immediate situation].

CHI: Ø hē shuǐ.
 ø drink liquid
 I want something to drink!

B. Examples of nominalizations for nonspecific-potential reference

First, nominalizations were used to refer to one or more entities extracted from a given group of entities, as shown in (6). Jiajia was playing with toy bricks in the presence of EXP. They were going to build a house with many bricks of different colors. Jiajia asked for blue bricks which she could not reach.

(6) Age of JJ: 2;6.22

CHI: Ø ná lán-de.
 ø take blue-DE
 I take some blue ones.

Second, nominalizations were used for other types of nonspecific-potential reference in the absence of a given set of entities in a given context, e.g., for a nonspecific concrete and expected entity: nominalizations such as *hǎo-chī-de* 'sweets' or 'good-eat-DE' were recorded and used across subjects, which were often characterized as baby talk. Terms belonging to baby talk were often equivalent to a set of several lexical items in the adult language, sharing some common features. For example, *hǎo-chī-de* 'sweets' or 'good-eat-DE' includes things children love to eat, e.g., fruit, sweets, and so on. In (7) Mengmeng visited EXP's laboratory and got many nice toys to play with. She enjoyed it very much and wanted to be nice to EXP. She sometimes had sweets at home but different ones at different times. *Hǎo-chī-de* was used to refer to the sweets that normally can be found at her home. In (8) Dandan also used *hǎo-chī-de* 'sweets' to refer to any sweets in the absence of any particular sweets.

(7) Age of MM: 2;2.27

[MM was in EXP's lab and said that she would give her sweets to eat.]

CHI: Děng wǒ huí jiā,
 wait 1p return home
 When I return home,

Ø gěi nǐ chī *hǎo-chī-de*.
 ø give 2p eat good-eat-DE
 I will give you sweets to eat.

(8) Age of DD: 1;10.8

[DD looked at her mother and asked for some sweets to eat.]

CHI: Ø yà [: yào]⁶ *hǎo-qī-de* [: hǎo-chī-de]
 ø want good-eat-de
 I want sweets.

C. Examples of kinship terms used for nonspecific-potential reference

Children also produced kinship terms for nonspecific-potential reference (without possessives or determiners), sometimes combined with another nominal, e.g., (9).

(9) Age of JJ: 2;7.19

CHI: Ø zài xiě yī xiǎo yāzi.
 ø again draw one little duck
 You draw a little duck again.

CHI: Ø xiě hǎoduō xiǎo yāzi.
 ø draw many little duck
 You draw many little ducks.

CHI: Ø xiě xiǎo yāzi māma.
 ø draw little duck mother
 You draw mother ducks.

CHI: Ø xiě xiǎo yāzi bàba.
 ø draw little duck father
 You draw little father ducks

D. Nominals with numeral determiners and/or classifiers for nonspecific-potential reference

When nominals with numeral determiners and/or classifiers were used for nonspecific reference, they were often used in contexts of nonspecific-potential reference. The great majority of these cases involved the singular numeral *yī* 'one', with a few occurrences

⁶ The child actually pronounced *yà*, which was equivalent to *yào*, as indicated by [: *yào*] in the example.

of other numerals (e.g., *liǎng* 'two', *sān*, 'three'). The following examples illustrate how these NPs were used to refer to nonexistent entities that the children or their addressees were going to construct. In (10) *yī-ge jīnyú* 'one-CL goldfish' was used when Duanlian was about to draw a picture of a goldfish. That is, *yī-ge jīnyú* 'one-CL goldfish' was used to refer to the potential but not yet existing goldfish, which would come into existence through the child's action of drawing. Similarly, in (11) Duanlian uses *yī-ge hóng-de* 'a red one' as he is going to draw a picture with a red pen in her hand. The general term *huà* 'picture' was understood from the context but not expressed. Finally, in (12) Jiajia used the expression *ge dàguānyuán* 'CL garden' in order to ask EXP to build a garden for her because she could not build as nice a garden as EXP.

(10) Age of DL: 3;3.0

[DL was making different drawings. After she drew a few pictures, she told the addressee that she could draw a goldfish too, then drew one thereafter.]

CHI: Wǒ huì huà yī-ge jīnyú.
 1p can draw one-CL goldfish
 I can draw a goldfish.

(11) Age of DL: 3;2.4

[DL is drawing for fun. She has a red color pen in her hand.]

CHI: <Wǒ> [ʃ] # Wǒ hái huà yī-ge hóng de.
 1p 1p again draw one-CL red DE
 I...I will draw another (picture) in red.

(12) Age of JJ: 2;6.22

CHI: Ayí gěi wǒ dā ge dàguānyuán.
 aunt give me build CL garden
 Aunt build a garden for me.

The following examples illustrate nominals with numeral determiners and/or classifiers used to refer to one entity extracted from a given group of entities. In (13) Mengmeng asked EXP to go get a book from the bookshelf for her because she wanted to tell a story to EXP. She used *běn-shū* 'CL book' to refer to any book of hers. In (14) after having finished telling a story, Jiajia also used a nominal with a numeral determiner and classifier *yī-ge wǒ huì jiǎng de* 'one-CL 1p can tell DE' to refer to any book of hers from which she knew the stories.

(13) Age of MM: 2;0.0

CHI: Nǐ qù ná běn shū.
 you go take CL book
 You go and get a book.

(14) Age of JJ: 2;10.5

CHI: Wǒ zài gěi nǐ zhǎo yī-ge wǒ
 1p again give 2p find one-CL 1p

 huì jiǎng de
 can tell DE

I will find a book for which I know the story.

In all such examples, it is highly likely that reference will be soon instantiated with actual entities either because nonexistent entities will soon exist, or because some specific entity will be soon picked out by the addressee in response to a nonspecific request. Thus, when children used nominals with numeral determiners and/or classifiers for nonspecific reference, these uses corresponded to a restricted set of contexts, namely nonspecific potential reference.

(2) Other cases of nonspecific reference

In addition to uses of NPs in nonspecific potential contexts, other nonspecific uses were found, although these cases were rare. The data showed that our subjects used two types of NPs for nonspecific reference in cases where there was no expectation that reference would be immediately instantiated: bare nominals and kinship terms (without possessives, determiners or other nominals). For example, in (15) the adult asked Mengmeng what a shovel was used for. She answered *chǎn tǔ* 'shovel earth'. Here a bare nominal *tǔ* 'earth' was used to refer to earth in general. More examples of bare nominals used for generic reference by other children are shown in (16) to (18): *lǎohǔ* 'tiger' in (16), *dàrén* 'adult' in (17), and *dà háizi* 'big kid' in (18).

(15) Age of MM: 1;10.13

EXP: Zhè # shénme ya?
 this what Q?
 What is this?

CHI: Zhè # chǎnzi.
 this shovel
 This is a shovel.

EXP: Chǎnzi chǎn shénme yong-de?
 shovel shovel what use-DE
 What is shovelled with a/the shovel?

CHI: Ø chǎn tǔ.
 Ø shovel earth.
 It is used for shovelling earth.

16) Age of ML: 1;8.13

[ADU asked ML what he was afraid of in general. In the context there was no tiger around.]

ADU: Nǐ pà shénme?
 2p fear what
 What are you afraid of?

CHI: Lǎohǔ.
 tiger
 tigers.

17) Age of JJ: 2;8.3

[JJ wanted to play with the tape-recorder. EXP said to her that she should not play with it. Then JJ asked:]

CHI: Dàrén néng wán Ø ma -?
 adult can play Ø Q
 Can adults play with it?

18) Age of MM: 3;0.5

[MM told EXP that she did not dare to play with the seesaw in the University kindergarten in the preceding utterances.]

EXP: Nà shéi gǎn wán Ø?
 then who dare play Ø
 Who dares to play with it?

CHI: Dà hái.
 big kid
 Big kids.

Example (19) illustrates the uses of bare kinship terms for nonspecific reference: EXP asks Jiajia if the Pandabear she is talking about has a family. Jiajia uses elder brother (term which she used to refer to all boys older than herself).

(19) Age of JJ: 2;10.5

EXP: Qiángqiang yǒu mèimei ma?
 Panda have younger-sister Q?
 Does the Panda have younger sisters?

CHI: Ø méi you.
 ø not have
 No.

[...]

EXP: Didi # ø yǒu ma?
 young-brother ø have Q
 Does he have younger brothers?

CHI: Ø yě méi yǒu.
 ø also not have
 He doesn't have any either.

EXP: Gēge ne?
 elder-brother Q
 And elder brothers?

CHI: Gēge # ø yě méi yǒu.
 elder-brother ø also not have.
 Elder brothers, he also does not have any.

5.2.2 Referring expressions used for specific reference

As listed in Table 5.3, all types of NPs, i.e., nominals with numeral or demonstrative determiners and classifiers, possessives, bare nominals, kinship terms, pronouns and zero pronouns were used for specific reference. Examples of NPs for specific reference fall into three groups: definite referring expressions, NPs without determiners, and nominals with numeral determiners and classifiers.

A. Definite referring expressions used for specific reference

Definite referring expressions were only used for specific reference by our subjects. For example, deictic pronouns were used to refer to particular entities. In (20) Mengmeng

used a deictic pronoun combined with a gesture to refer to a particular location on her sweater. In (21) she also uses such a pronoun, while presenting the denoted referent.

(20) Age of MM: 1;10.13

[MM notices that there is a small hole in her clothes. She points it out to EXP.]

CHI: Zhè pò le.
 this break LE.
 This is torn.

(21) Age of DD: 1;9.25

[Dandan's mother cut her nails for her. After she had finished cutting one nail, Dandan used the deictic pronoun *zhè-ge* 'this one' while moving one of her other fingers in order to refer to the particular finger.]

CHI: Ø zài jiǎo zhè-ge.
 Ø then cut this-CL
 Then you cut this one.

Children also used personal pronouns to refer to specific referents. For example, in (22) Mengmeng reads a picture book to EXP. On the picture there are two animals and one inanimate object, i.e., a sheep, a giraffe and a balloon. Mengmeng used the bare nominal *xiǎo yáng* 'little sheep' and *qìqiú* 'balloon' to refer to the sheep and balloon on the picture and the pronoun *tā* '3p' to refer to the giraffe.

(22) Age of MM: 2;0.0

[The little sheep's balloon was on a tree. The little sheep wanted the giraffe to get it for him.]

CHI: Xiǎo yáng ràng tā ná qìqiú.
 little sheep let 3p take balloon
 The little sheep let him get the balloon.

Proper names were also used to refer to specific referents, as shown in (23) below.

(23) Age of DL: 3;2.4

[Xiāngshān is a name of a place.]

CHI: Wǒ māma <qù>[/] # qù Xiāngshān.
 1p mummy go # go Xiāngshān
 My mother went to Xiāngshān.

Rare cases of ambiguous reference were found in our data when children denoted specific referents by means of definite referring expressions. For example, in (24) Duanlian's father asked her to recite poems. After she had recited several poems, she wanted to try one poem taught by her father, but she could not remember it. She referred to that poem with a deictic pronoun modified by a relative clause *nǐ jiāo wǒ de* 'the one you taught me'. Since her father taught her more than one poem, it was impossible for him to identify the particular poem she had in mind.

(24) Age of DL: 3;2.28

[DL's father asked her to recite one more poem]

CHI: *Nǐ jiāo wǒ de nà-ge wǒ bú huì.*
 2p teach 1p DE that-CL 1p not can
 I cannot recite the one you taught me.

B. Types of nominals without determiners used for specific reference

In addition to demonstrative expressions, bare nouns were mainly used to refer to specific referents, especially when there was only one possible relevant entity in the context. In example (22) above, bare nouns *xiǎo yáng* 'little sheep' and *qìqú* 'balloon' were used to refer to the only sheep and balloon in the context. If there is more than one possible entity from a class in the situation and the speaker intends to refer to a particular one from the given set of entities, he has to add a distinctive modifier to the noun to indicate the intended referent.

We found that children actually **did add distinctive modifiers** when referring to a particular entity by means of nominals without determiners in contexts where more than one candidate were available. In example (25) Mengmeng used *máo mèimei* 'long-hair young-sister' to refer to her doll with long hair and used *tù mèimei* 'rabbit young-sister' to refer to her doll with white hair. She was feeding the *máo mèimei* 'long-hair young-sister' water, but she was not going to feed the *tù mèimei* 'rabbit young-sister'. Similarly, in (26) the nominal with a relative clause was used to refer to the boat made by the child.

(25) Age of MM: 1;7.9

[MM played with her two dolls: one with long hair and one rabbit doll.]

CHI: \emptyset *jiù gěi máo mèimei hē \emptyset .*
 \emptyset just give hair young-sister drink \emptyset
 I only give the long hair young-sister water to drink.

Ø bù gěi tù mèimei hē ø.
 ø not give rabbit young-sister drink ø
 I don't give the rabbit young-sister water to drink.

(26) Age of MM: 2;2.27

[EXP and MM folded boats. There were two boats in front of MM. One was made by EXP and the other was made by MM herself.]

CHI: *Mengmeng* *dié* *de* *chuán* bù hǎo.
 Mengmeng fold DE boat not good.
 The boat folded by Mengmeng does not look good.

C. Nouns with numeral determiners and/or classifiers used for specific reference

Nouns with numeral determiners and/or classifiers were often used to denote specific referents. These cases were of two types. The majority consisted of NPs used to mention specific referents for the first time, particularly when the listener did not share knowledge of the referents introduced, e.g., when children narrated stories and talked about remote referents. In most of these cases the singular numeral *yī* ('one') was used in combination with a classifier. An example is shown in (27). However, such uses were more typical of late age phases and rare at early phases. Other cases of nominals with numeral determiners occurred in contexts where children specified quantity, typically by means of plural numerals, e.g., *sān-ge niao* ('three-CL bird'), to refer to a specified number of given referents. Details about the use of nouns with numeral determiners and classifiers for specific reference to new entities will be discussed and illustrated in the following chapter.

(27) Age of JJ: 2;9.11

CHI: *Tā* *dài* *yī-ge* *xiǎo* *hóuzi*.
 3p bring one-CL little monkey
 He comes with a little monkey.

5.3 Summary

In summary, the findings shown in Tables 5.2, 5.3a, 5.3b, 5.3c and illustrated in the examples above show that children related the forms of NPs and their functions as displayed in Table 5.4.

Table 5.4 Referring expressions used for nonspecific versus specific reference

type of NP	nonspecific reference		specific reference
	/ nonspecific- potential contexts	\ other context	
bare-N	+	+	+ mostly new
KIN	+	+	+
num-cl-N	+	-	+
other-N	+	-	+
dem-cl-N	-	-	+
pos-N	-	-	+
d-PRO	-	-	+
p-PRO	-	-	+
ZERO	-	-	+

These results can be summarized as follows. First, uses of NPs for specific reference were the most frequent at all age phases. Second, some NPs were never used for nonspecific reference (demonstrative nominals, pronouns), whereas all NP types were used for specific reference. Third, among nonspecific uses, a special subset corresponded to uses in potential contexts, i.e., contexts where there was a strong expectation that a specific referent would be selected as a result of the utterance. In these contexts, nominals with numeral determiners (mostly *yī* 'one') and/or classifiers were frequent. Finally, with respect to specific reference, despite some rare cases of ambiguous reference (with definite referring expressions), specific uses were rarely ambiguous (distinctive modifiers added to nominals without determiners), but they were frequently deictic (e.g., pronouns). A special subset of NPs used for specific reference was also found, namely cases corresponding to the introduction of new referents (nominals with numeral determiners and/or classifiers).

5.4 Conclusion

The findings discussed in this chapter show that our subjects differentiated specific reference from nonspecific reference to some extent. They reserved definite referring expressions (demonstrative nominals, pronouns) for specific reference and used other NPs (bare nouns, nouns with numeral determiners and/or classifiers, nominalizations, kinship terms) for both specific and nonspecific reference. In addition, among the NPs that were used for both specific and nonspecific reference, nominals with numeral determiners and/or classifiers were reserved for two special types of cases: when they were used for nonspecific reference, they were reserved for nonspecific-potential

contexts; when they were used for specific reference, most cases corresponded to the introduction of new referents, while some (mostly plural numerals) were used for counting quantities. Children also added distinctive modifiers to nouns to refer unambiguously to particular entities selected from a given set of similar entities. Except for a few cases, reference was not ambiguous.

Thus, in general, children distinguish specific reference from nonspecific reference linguistically, showing that they have some knowledge of these notions before the age of three-and-a-half years. This differentiation, however, is still somewhat primitive for two reasons. First, only the most obviously definite forms, sometimes used in clearly deictic ways, are reserved for specific reference and differentiated from NPs used for nonspecific reference. Second, nonspecific uses are less frequent than specific ones and most consist of nonspecific potential cases, which involve an expectation that reference will in fact be instantiated, while other nonspecific uses are rare. In this respect, nonspecific-potential uses seem to constitute a privileged type of context for the emergence of nonspecific NP uses, i.e., they can be viewed as being intermediary between specific and nonspecific reference. Finally, the emergence of some appropriate uses of NPs are favored by particular contexts. In particular, although numeral determiners and/or classifiers are less frequent than other NPs, their early uses are maximized by two related contexts: in addition to their sheer numerical function (counting), they were most frequent in contexts where specific reference is potential (nonspecific reference, but potential new referents) and contexts where referents are first mentioned (specific new referents). Further analyses relevant to the second type of contexts are presented in the next chapter which focuses on the introduction of referents in discourse.

6 Learning to Introduce Referents

6.0 Introduction

This chapter provides an analysis of how Chinese children acquire the linguistic means to introduce referents. Referents can be introduced in Chinese by means of NP forms, as well as by NP position in relation to the verb within the utterance (see Chapter 2). We will first focus on whether children learn to open a conversation about a referent with postverbal position (6.1), and then on how forms develop for first mention (6.2). Finally, the summary (6.3) will address the following questions:

1. What (predominant) devices do children use for referent introductions?
2. Do the predominant devices change with age?
3. When do children take their listener's point of view into account?

6.1 Introducing referents by means of noun phrase position in relation to the verb

6.1.1 Introducing referents by labelling, preverbal position and postverbal position

As was shown in Chapter 2, new referents have to be introduced with postverbal NPs in Chinese. In contrast, given referents can be in principle introduced with postverbal or preverbal (e.g., when referents are presupposed) NPs. A postverbal NP is generally preferred to open a conversation about a referent, even if it is given for the listener. Thus, Chinese children have to learn to use word order (i.e., postverbal NPs) to open a conversation about a referent, especially when this referent is new.

Position in relation to the verb has been coded in three ways in this study: NPs in preverbal position (PREV), NPs in postverbal position (PSTV), and a remaining class of NPs used in verbless utterances as part of labellings (PRED).

Figure 6.1 shows the proportion of first mentions that consisted of NPs used in verbless utterances as part of labellings (PRED), NPs in preverbal position (PREV), and NPs in postverbal position (PSTV). First of all, the use of PRED to introduce referents

decreases with age: (1) Mengmeng introduced more than 60% of referents with PRED at Age Phase 1, but less than 10% at Age Phase 9; (2) Dandan used relatively fewer PRED to introduce referents than Mengmeng or Maliang at the same age, i.e., at Age Phases 1, 2, and 3; between 20% to 30% of referents were introduced with PRED during this period; (3) Maliang's use of PRED to introduce referents also decreased with age: from around 60% to 0%; (4) As for Jijia and Duanlian, PRED was no longer their preferred means of mentioning referents for the first time (comparable to Mengmeng from Age Phase 8). Less than 20% of referents introduced by Jijia and by Mengmeng at Age Phase 8 and less than 10% of referents introduced by Duanlian and by Mengmeng at Age Phase 9 were first mentioned with (verbless) labellings.

Overall, (verbless) labelling is a device for children to introduce referents before Age Phase 2. The use of this device decreased with age, and was rarely found with the children after Age phase 8. The results also revealed that the use of NPs in utterances containing verbs for referent introductions increased with age.

With respect to referent introductions in utterances containing verbs, Figure 6.1 does not show any clear developmental tendency to use postverbal position before Age Phase 8. Our subjects became sensitive to the use of postverbal position from Age Phase 8 on.

Chinese allows the use of preverbal NPs to introduce given referents when they are presupposed while requiring postverbal position for new referents (see Chapter 2). Our subjects mainly talked about referents that were present in the here-and-now. Referents on first mention were often presupposed to a different extent from non-linguistic context. The coding did not distinguish the extent to which given referents were presupposed because of the difficulty in judging the children's productions. However, one distinction was made for first mentions, i.e., the distinction between given and new referents: given referents were those that were mutually known to some extent, whereas new ones were those that were not mutually known on the basis of the information available in both linguistic and non-linguistic contexts.

Table 6.1 below shows the proportion of new referents introduced with postverbal position. The children before Age Phase 6 rarely talked about things other than those that were in the here-and-now. They began to talk about things not in the immediate context and new to the listener at around Age Phase 6. However, they did not always use postverbal position to introduce new referents in obligatory contexts: 40% and 79% of new referents were introduced with postverbal position by Mengmeng at Age Phases 8 and 9, respectively; 71% and 89% by Jijia at Age Phases 6 and 7, respectively; and 75% and 81% by Duanlian at Age Phases 8 and 9. They did not yet learn the use of postverbal position to introduce referents, according to Brown's (1973)

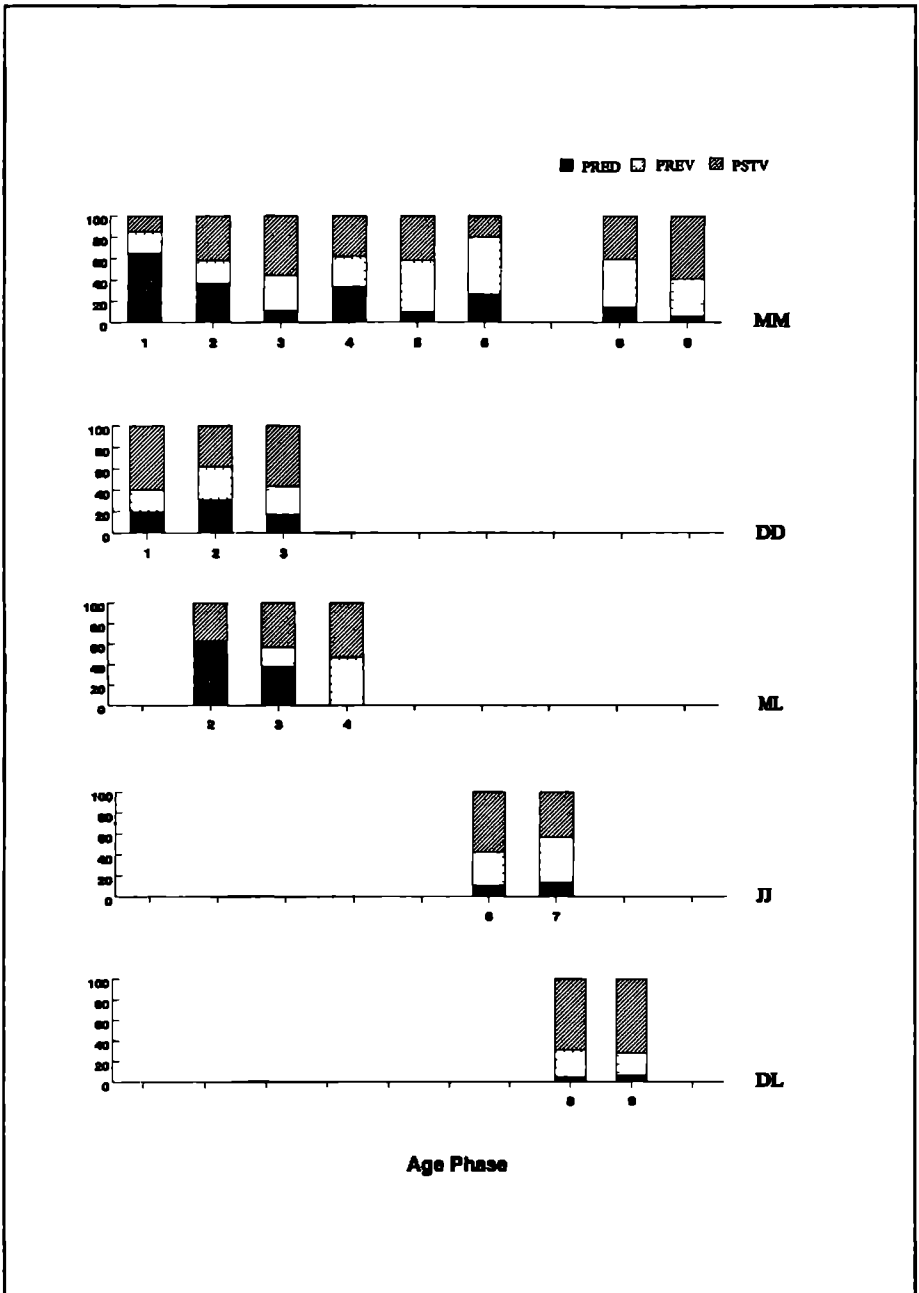


Figure 6.1 Proportions of first mentions of referents with verbless labelling (PRED), with preverbal position (PREV), and with postverbal position (PSTV) in five children

Table 6.1* Proportions of new referents introduced with postverbal position

Child	Age Phase	1	2	3	4	5	6	7	8	9
MM	pstv	(0)	(1)	(1)	(3)	(2)	(0)		40%	79%
	total	3	1	2	5	7	0		25	42
DD	pstv	(0)	(3)	(3)						
	total	0	3	4						
ML	pstv		(2)	(3)	(0)					
	total		2	3	0					
JJ	pstv						71%	89%		
	total						59	28		
DL	pstv								75%	81%
	total								24	104

* The frequencies are shown in parentheses when the total number of new referents is less than ten cases.

criterion¹.

This result raises the following question:

What did the children have in mind to organize conversation, especially to introduce referents into discourse, in the early phases of development?

We will discuss this question in Section 6.1.2 below.

6.1.2 Using semantic notions to construct discourse at early phases

As discussed in 4.3.2, in Chinese two factors are involved in deciding word order on first mention: semantic (i.e., the semantic role property) and pragmatic (i.e., information status) factors. With respect to the first mention of an animate or an inanimate referent which functions as patient or benefactor in an event, a postverbal NP can be the means of marking both the semantic role or the pragmatic status of new information. In contrast, when an animate referent functions as an agent in an event, the semantic factor suggests that a preverbal NP should be used, while the pragmatic factor suggests a

¹ The criterion for the acquisition of the use of postverbal position to introduce referents is based on the frequency of occurrence in obligatory contexts. In most cases, a 90% criterion is used (cf. Brown, 1973).

postverbal NP to introduce the new referent.

With respect to how children construct conversation, one possible hypothesis based on the findings discussed above is:

Children primarily construct sentences on the basis of the semantic factor 'role property', i.e., they use word order to encode roles such as agent and patient, regardless of whether the NPs are used for referent introductions or for reference maintenance.

If true, this hypothesis predicts that in introducing animate referents, young children should use preverbal position when an NP is in agent or experiencer role and postverbal position when it is in patient or benefactor role.

A further analysis of first mentions of *animate* referents in terms of their positions in relation to the verb by the five children is given in Figure 6.2: this figure shows the proportions of first mentions that consisted of NPs in verbless labellings (PRED), preverbal position (PREV), and postverbal position (PSTV). In several Age Phases, less than ten first mentions of (third person) animate referents were recorded. These age phases are marked with parentheses in figure 6.2. Again, Figure 6.2 does not show that children used postverbal position on first mention before Age Phase 9 (except Duanlian at Age Phase 9).

Introducing animate referents preverbally was quite frequent in the corpora of all the children studied. Some examples are given below: e.g., first mentions of animate referents such as *xiǎo niǎo* 'little bird' in (1), *nèi-ge xiǎo gǒu* 'that-CL little dog' and *nèi-ge* 'that-CL' in (2). Similar examples can be found in the Appendix II: e.g., *xiǎo gǒu* 'little dog' in *Hòulái xiǎo gǒu kàn-jiàn ø le* 'Later, a little dog saw it' and *yī-wèi lǎo bóbo* 'one-CL old man' in *Hòulái <yī-ge> [/] yī-wèi lǎo bóbo lái le* 'Then, an old man arrived' in Story Two, *A Seven Color Flower*, and *dàhuīláng* 'wolf' in *Guò le yìhǔr # dàhuīláng lái le* 'After a while a wolf came' in Story Three, *A Mother Rabbit and Her Three Babies*. They were agent or experiencer, occurring preverbally. Among these examples *yī-wèi lǎo bóbo* 'one-CL old man' and *dàhuīláng* 'wolf' were introduced with the motion verb *lái* 'come': although this verb allows the introduced agent to occur postverbally, the child used preverbal position to introduce these animate referents.

(1) Age of MM: 2;0.0

[MM reads a picture book together with EXP]

EXP: Nǐ kàn, <xiǎo yáng> [/]
 you look little sheep

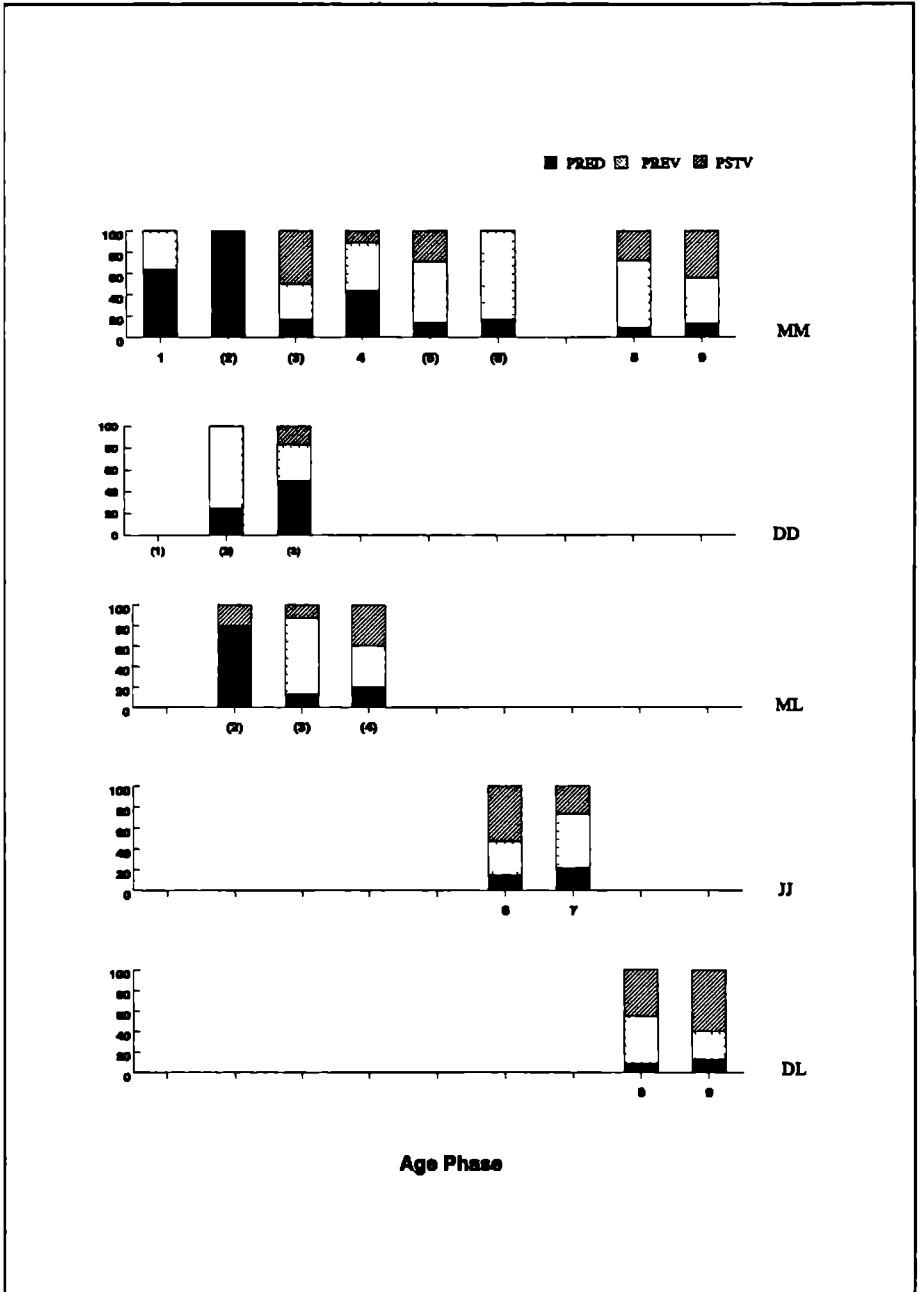


Figure 6.2 Proportions of animate referents introduced with verbless labellings (PRED), with preverbal position (PREV), and with postverbal position (PSTV) in five children

xiǎo yáng hái gàn shénme?
 little sheep again do what

Look! What is the little sheep ... the little sheep doing ?

CHI: Xiǎo yáng hái kàn.
 little sheep again look
 The little sheep is looking too.

Xiǎo niǎo lái le.
 # little bird come LE
 A little bird came.

(2) Age of MM: 2;3.7

[MM told a story to EXP. She used preverbal NPs *nèi-ge xiǎo gǒu* 'that-CL little dog' and *nèi-ge* 'that-CL' on first mention to denote referents that were not in the immediate context. Neither nonverbal information nor previous verbal information was sufficient to identify the referents denoted by *nèi-ge xiǎo gǒu* 'that-CL dog' and *nèi-ge* 'that-CL'.]

CHI: <Nèi> [//] *Nèi-ge xiǎo gǒu* shuō,
 that that-CL little dog say
 That little dog says,

nèi-ge jù xià rén le.
 that-CL just threaten people LE
 that one then threatens people.

EXP: Xiǎo gǒu shuō jù xià rén le.
 little dog say just threaten people LE
 The little dog speaks and threatens people.

Něi-ge xiǎo gǒu shuō,
 which-CL little dog say
 What little dog speaks,

něi-ge jù xià rén le.
 which-CL just threaten people LE
 Which one then threatens people?

Examples such as (3) below were also observed from time to time. The question raised by EXP provided a construction with a motion verb *fēi lái* 'fly come' which allowed the agent to occur postverbally. It is extremely common to answer with the same construction, *fēi lái le (yī-ge) dà dòngwù chángjǐnglù* 'fly come LE (one-CL) big animal giraffe' or by an NP denoting the referent *dà dòngwù chángjǐnglù* 'big animal giraffe'.

However, Mengmeng did not answer the question in either of these ways; rather, she used the referent giraffe preverbally. Further details concerning how the children introduce referents will be given in 6.2.

(3) Age of MM: 2;0.0

EXP: Yòu fēi lái le shéi le ?
 again fly come LE who LE?
 Who else came flying here?

CHI: Dà dòngwù chángjǐnglù lái le.
 big animal giraffe come LE
 The animal big giraffe came.

6.1.3 The acquisition of the existential presentative constructions and their functions

Presentative existential constructions are a formal means of introducing new referents which children have to learn. Table 6.2 shows the absolute number of existential presentative constructions used by the five children as a function of age. This construction was used only three times by Mengmeng before Age Phase 8, six and nine times at Age Phases 8 and 9; only once for Dandan during the whole period of recording between Age Phases 1 and 3; once for Maliang during the whole period of recording between Age Phases 2 and 4; 36 and seven times for Jiajia at Age Phases 6 and 7², respectively; eight and 19 times for Duanlian at Age Phases 8 and 9, respectively. Overall, this construction was rarely used by the children before Age Phase 6.

In contrast, this construction was used by all the children above Age Phase 6. In Mengmeng's data at Age Phases 8 and 9, and also in the data of Jiajia and Duanlian. Whenever existential presentative constructions were used, they were used by the children in an appropriate way. Most of the time they were used to introduce referents occurring at the *beginning* of narratives, i.e., when the children recited stories or when they read picture books together with their listeners. The children used this construction in a manner consistent with the target language. However, they did not use existential constructions all the time where adults would use them. New referents entering into stories later were often introduced with preverbal position instead. The children did not

² As given in Chapter 4, each age phase consists of several sessions. In Jiajia's corpus, Age Phase 6 consists of 6 sessions and Age Phase 7 consists of 3. This affects the absolute number of occurrences of existential presentative constructions used by the children in each Age Phase. These uses were mainly related to narratives.

master all of the linguistic properties of this construction: they used it in restricted contexts for referent introductions, but not as a general means of introducing new referents.

Table 6.2 Absolute frequencies of referent introductions in existential presentative constructions

Child	1	2	3	4	5	6	7	8	9
MM	0	0	1	2	0	0		6	9
DD	0	0	1						
ML		0	0	1					
JJ						36	7		
DL								8	19

6.1.4 Summary

Before Age Phase 2, most of children's utterances were verbless: NPs in these utterances were used to introduce referents, presumably by labelling them. From the age of one-and-a-half years on, first mentions of referents with NPs in utterances containing verbs increased with age. Children before the age of three-and-a half years mainly relied on the semantic factor 'role property' to construct utterances, including in cases of referent introductions. The uses of the pragmatic word order (i.e., postverbal position) for referent introductions seem to increase with age. However, these uses have not yet been fully analyzed by the child. Thus, children have not acquired the fully and systematic contexts of the uses for postverbal position to introduce referents.

6.2 Referent introductions and forms

All types of NPs used for the first mention of referents by the five children at each age phase were compiled. The proportions of different types of NPs used for first mentions are given in Tables 6.3a and 6.3b.

Table 6.3a Distribution of different types of noun phrases for referent introductions in each of Mengmeng's (MM) age phases

Child	Age Phase	Total (no.)	num-cl-N (%)	dem-cl-N (%)	bare-N (%)	pos-N (%)	KIN (%)	other-N (%)	p-PRO (%)	d-PRO (%)	ZERO (%)
MM	1	34	0	0	76	3	3	3	0	6	9
MM	2	9	0	0	11	22	0	0	0	56	11
MM	3	18	0	0	28	11	22	5	0	22	11
MM	4	69	4	1	51	12	1	1	0	26	3
MM	5	31	3	3	16	16	0	0	3	51	6
MM	6	16	6	0	38	0	0	0	6	31	13
MM	7	(no data)	-	-	-	-	-	-	-	-	-
MM	8	158	6	7	33	8	10	2	4	28	3
MM	9	158	16	4	42	7	4	3	1	17	7

Table 6.3b Distribution of different types of noun phrases for referent introductions in each of Dandan's (DD), Maliang's (ML), Jiajia's (JJ) and Duanlian's (DL) age phases

Child	Age Phase	Total (no.)	num-cl-N (%)	dem-cl-N (%)	bare-N (%)	pos-N (%)	KIN (%)	other-N (%)	p-PRO (%)	d-PRO (%)	ZERO (%)
DD	1	10	0	10	60	0	0	0	0	0	30
DD	2	42	0	0	43	0	2	0	0	26	29
DD	3	66	0	0	55	0	5	3	2	20	17
ML	2	16	0	6	81	6	6	0	0	0	0
ML	3	16	0	0	63	6	12	0	0	12	6
ML	4	15	0	0	33	0	13	0	7	20	27
JJ	6	290	5	7	39	12	9	1	2	20	5
JJ	7	196	5	9	42	3	8	3	15	13	1
DL	8	75	15	8	32	16	5	0	0	19	5
DL	9	214	12	4	49	11	11	2	1	7	3

These Tables show:

- (1) More than 60% of first mentions at Age Phase 1 consisted of bare nominals: 76% for Mengmeng and 60% for Dandan. From Age Phase 2 on, first mentions encoded by bare nominals decreased with age, as a result of the occurrence of deictic pronouns and of other types of NPs. Despite the use of deictic pronouns and other types of NPs, bare nominals were among the most frequently used NPs (30-40%) for the first mention of referents across all ages.
- (2) Demonstrative pronouns were frequently used for first mentions between Age Phase 3 and 8: 12% and 56% of first mentions involved demonstrative pronouns for all children.
- (3) Nominals with numeral determiners and classifiers were not frequently used by all children for referent introductions. However, there was a tendency for the use of this type of NP to increase from Age Phase 8 on.
- (4) First mentions with zero forms decreased with age. They were rarely used by the children after Age Phase 8.
- (5) Nouns with possessives, proper names, and other types of noun phrases were used from time to time for the first mention of referents, but not frequently for all children.

Combining the quantitative analysis of different types of NPs on first mention with the age progression and the results discussed in 6.1, three stages may be distinguished as follows:

- i) **The One-word Stage**, corresponding to Age Phase 1: children mainly use bare nominals in verbless utterances (see 6.1.1);
- ii) **The Deictic Stage**, corresponding to Age Phases 2 through 7: children mainly use verbal deixis to mention referents on first mention and they use the semantic factor 'role property' to construct conversation and to introduce referents, rather than using the pragmatic factor of information status (see 6.1.2);
- iii) **The Transitional Stage**, corresponding to Age Phase 8 through 9: children of this stage are beginning to become sensitive to adult uses of devices, although it still takes some time for them to master them (see 6.2.3).

6.2.1 The One-word Stage

Among the five children studied, Maliang, Jijia, and Duanlian were beyond the one-word stage at the time of our first visit. Therefore, only Mengmeng's and Dandan's data at the One-word Stage (Age Phase 1) will be discussed.

A. Establishing reference by naming/labelling accompanied with stress or rising intonation

In the first analyzed session Mengmeng and Dandan were at the ages of 1;3.16 and of 1;3.4, respectively. By that time their MLUs were 1.333 (see Table 4.2MM in Chapter 4) and 1.426 (see Table 4.2DD in Chapter 4). Mengmeng and Dandan produced mainly one-word utterances. The first nouns were concrete nouns, referring to toys and other inanimate things around the child, as well as the people present in the situation.

Bare nominals (mainly consisting of bare nouns) were used for first mentions at the One-word Stage, and they were often accompanied by *stress (indicated by //)*. These cases typically involved *labelling*. Consider (4) below.

Mengmeng saw a newspaper and wanted it. She said *bào* 'newspaper' with stress. Her grandmother did not intend to bring her the newspaper, for fear that she would tear it, so she only repeated Mengmeng's utterance with an expansion. However, Mengmeng insisted: she used an interjection *eng@₁* to call her grandmother's attention and asked her to pass the newspaper over to her again with *kàn bàobao* 'read newspaper'. Interjections such as *eng@₁* were often used by children in the initial position of utterances for directing the listener's attention to desired objects, where their previous requests were not satisfied.

(4) Age of MM: 1;3.16

CHI: //Bào.
 newspaper
 The newspaper.

GMO: Ao # Mengmeng kàn bào.
 uh # Mengmeng read newspaper
 Uh, Mengmeng [= baby talk] reads the newspaper.

CHI: Eng@₁³ ø kàn //bàobao.
 ohm ø read newspaper.
 Ohm, I read the newspaper!

One-word utterances with *rising intonation (indicated by -')* were another means used by young children to first mention referents. In (5) below, Mengmeng looks out the window to the clothes on the rope from which water was dropping down.

Mengmeng uttered *shuǐ* 'water' with RISING intonation, while attending to the clothes. After her grandmother replied *dī shuǐ ne* 'the water is dropping down',

³ *eng@₁* or *en@₁* is an interjection only used by the children. When their requirements are satisfied, the children use it at the beginning of utterances followed by re-request.

Mengmeng said *dī shuǐ* 'drop water' with LEVEL intonation.

(5) Age of MM: 1;5.31

CHI: *Shuǐ* -'.
water
Water.

GMO: *Dī shuǐ ne* -.
drop water ne.
The water is dropping.

CHI: *Dī shuǐ*.
drop water.
The water is dropping.

If the listener did not attend to the referent when the child mentioned it, then, joint reference was not established on **first** mention. Children often repeatedly mentioned the referent in order to get the listener to attend to it. In (6) below, for example, Mengmeng was in bed and her grandmother helped her getting up. She saw embroidered birds on the pillow and uttered *niǎo sǐ le* 'bird is dead'. Her grandmother could not figure out what Mengmeng said. There were no dead birds present. Mengmeng repeated the same utterance again and again until her grandmother identified the embroidered figure on the pillow. Mengmeng might have wanted to tell her grandmother that the embroidered birds were not living (real) birds.

(6) Age of MM: 1;5.30

CHI:	<Niǎoniao> [//]	<Niǎo sǐ> [//]	<i>Niǎo sǐ</i>	<i>le</i> .
	bird	bird die	bird die	LE
	Bird(s), bird(s) die ... bird(s) are dead.			

GMO: A@i-^ # *shénme* -?
uhm # what -?
Uhm, sorry?

CHI: *Niǎoniao*.
bird
Bird(s).

GMO: N1 *yǎo shā niǎo* a -?
you want kill bird a -?
Do you want to kill bird(s)?

Niǎo ma?
 # bird Q?
 Do you mean 'birds' ?

CHI: <Niǎo sǐ> [//] # Niǎo sǐ le.
 bird die # bird die LE
 Bird(s) die ... bird(s) are dead.

GMO: Nǎr niǎo sǐ le -?
 where bird die LE
 Where did the birds die?

CHI: Niǎo sǐ.
 bird die
 The birds died.

GMO: Ao # tā gàosu nǐ nà zhěntou-shàng
 uh # 3p tell 2p that pillow-on
 niǎo sǐ le.
 bird die LE

Uh, she [= the child] is telling you [= GMO] that the birds on the pillow are dead.

[= GMO explains to herself what the child meant when she said *niǎo sǐ le*.]

Cases where referents were not identified occurred. An example is given in (7): in 3/ the child said *niú* 'cows'. Neither a real cow nor a toy cow was present. Mengmeng's grandmother could not identify the intended referent. Mengmeng uttered *niúniú* 'cows' several times without an accompanying gesture indicating the referent. She did refer to something repeatedly, but without any success. Failing to establish reference, Mengmeng dropped the topic. There were also other examples in our data showing that young children were attentive to the necessity of establishing joint reference. Children were often not willing to go on with the conversation when referents were not recognized by the listener.

(7) Age of MM: 1;3.16

1/ GMO: <Jīntiān a> [/] Jīntiān # nǐ shàng nǎr
 today A ... today # 2p up where
 wár qù le?
 play go LE

Today ... today, where did you go to play today ?

- 2/ GMO: # A -?
Q
Uhm?
- 3/ CHI: *Niúniu.*
cow
Cow.
- 4/ GMO: A -?
Q
Uhm?
- 5/ GMO: Dà bó jiā, shì ba?
elder uncle home, be BA?
At your uncle's home, isn't it?
- 6/ MM: *Niúniu*
cow
Cow.
- 7/ MM: # *Niúniu*
cow
Cow.
- 8/ MM: # *Niúniu* *niúniu*
cow cow
Cow cow.
- 9/ GMO: A-' # shénme?
a@i-' # what
Uhm, sorry?
- 10/ CHI: *Niú.*
cow (??)
Cow.

Similar cases also occurred in Dandan's data. She also used bare nouns with stress to establish joint reference. Examples are given in (8) and (9) below.

- (8) Age of DD: 1;3.4

[DD wanted her toy dog which she could not reach by herself.]

CHI: //Gǒu.
 dog
 dog!

(9) Age of DD: 1;4.16

[DD wanted to put on her shoes.]

CHI: Jié [: xié] -'.
 shoe -'.
 shoes !

B. Establishing joint reference to unknown objects by known nouns

Mengmeng and Dandan had a limited vocabulary at Age Phase 1. They often used a known noun for a new object. At the earliest stage, they used an available noun randomly to refer to new objects (see (10) below).

(10) Age of MM: 1;3.16

CHI: Qìchē [*] [=! pointing to a fish].
 car
 Car.

GMO: Ao.
 uhm
 Uhm.
 [= GMO does not see what MM refers to]

CHI: Qìchē [*] [=! points to a fish]
 car
 A car.

GMO: Bú shì qìchē # yú
 not be car fish
 That isn't a car. It's a fish.

CHI: Yú.
 fish
 A Fish.

Later on, the 'novel' object denoted by a known noun often shared some features with the 'old' object denoted by the same noun. For example, Mengmeng used a known noun denoting an animate referent, e.g., *qīngwā* 'frog', rather than a known noun denoting an inanimate referent, for an unknown animate *sōngshǔ* 'squirrel' (see (11)).

(11) Age of MM: 1;4.6

CHI: Qīngwā [*] [=! pointing to a squirrel]
frog
A frog.

MOT: Ao@i zhè lǐtōu méi yǒu qīngwā.
Aham this inside not have frog
Aham, there are no frogs here.
[= MOT refers to the picture.]

MOT: Zhè shì xiǎo sōngshǔ.
this be little squirrel.
This is a little squirrel.

CHI: Xiǎo sōngshǔ -?
little squirrel
A little squirrel ?

MOT: ai@i xiǎo sōngshǔ -.
yeah little squirrel.
Yeah, a little squirrel.

She also used a known noun *hē-shuǐ-de* 'drinking-water' for a 'new' object, i.e., a water pan, because the new object shared one of the functions with the 'old' object, i.e., cups. Both of the objects could carry water (see (12)).

(12) Age of MM: 1;4.6

CHI: <Hē-shuǐ> [/] *Hē-shuǐ-de.*
drink-water drink-water-DE
something to drink water.

MOT: Ao@i hē-shuǐ-de.
Aham, drink-water-DE
Aham, something to drink water.

Guō.
pan
A pan.

Non-linguistic information (e.g., pointing and gazing) was extremely important for the listener to avoid a common association between the known words with the 'old' objects and to establish a new link between the known word and the 'new' objects. The phenomenon of old nouns used for novel entities has been referred to as *overextension*

(Clark, 1973; Hoek, Ingram, & Gibson, 1986). For the identity of a referent as such, the listener often needs to follow up the children's attention or accompanying deictic gesture. Such cases (e.g., shown in (10), (11), and (12)), which occurred at Age Phase 1 in Mengmeng's data, did not occur at Age Phase 1 in Dandan's data, but they did occur later.

C. Establishing joint reference by non-overt lexical forms

At the One-word Stage there were situations where children referred to an entity without mentioning it with an overt lexical item. In other words, children described the action or motion of an entity, rather than the entity itself. Such cases were not frequent after the early phases of the deictic stage. These situations also included some first 'mentions' of referents. Since there was no qualitative difference between first mentions with zero forms at the One-word Stage and at the Deictic stage, the cases are discussed together below.

First mentions with zero forms when referents change location

One type of first mention involving zero forms occurred in utterances with motion verbs such as *diào* 'fall', where the intended referent itself changed its location or was moving. Referents were often highlighted by motion encoded in the verbs. However, they were not always highlighted for the listener when the child described an immediate past event that was not shared with him (i.e., he had not seen what had happened). Therefore, the referent was not always identifiable.

For example, in the situation shown in (13) below EXP saw that the doll fell down, so she identified the referent immediately.

(13) Age of DD: 1;8.10

[DD was in bed in the morning. The doll she played with fell down].

CHI: Ø diào ou [: le].
 ø fall LE
 It fell.

CHI: Ø diào ou [: le].
 ø fall LE
 It fell.

EXP: Ø diào le.
 ø fall LE
 It fell.

In another situation shown in (14) below, Mengmeng's grandmother asked her about her visit to EXP's lab some days earlier. Several toy-bricks Mengmeng played with earlier fell down to the ground.

Mengmeng said *diàodiào* 'fall-fall'. Her grandmother did not see that the toy-bricks fell down. Therefore, she could not figure out what Mengmeng said. She inquired what the child wanted and Mengmeng replied *jīme* 'toy-bricks'. Her grandmother, then, noticed the toy-bricks on the ground.

(14) Age of MM: 1;4.16

GMO: Jī-ge āyí gēn nǐ wár?
 how-many-CL aunt with 2p play
 How many aunts played with you?

GMO: Sān-ge, shì ba -.
 three-CL be BA
 Three, right?

CHI: Ø diàodiào.
 ø fall-fall
 It fell.

GMO: Nǐ yào shénme?
 2p want what
 what do you want?

CHI: *Jīme* [: jīmù]
 toy-brick
 The toy bricks.

GMO: Jīmù # nǐ lǎo diū ao -.
 toy-brick # 2p always fall PATL -.
 You often lose the toy bricks.

Similar cases were also recorded in Dandan's data (see (15) below). Dandan said *diào le* 'fell' and continued to walk. EXP could not identify the object that had fallen down because she did not see it when it fell down. After EXP's request, Dandan replied with *piáng diào le* 'the coin fell'. By following the direction toward which Dandan walked, EXP found the coin.

(15) Age of DD: 1;9.25

[DD was at the stage when she was learning to walk. EXP wanted her to sit at her chair. She was reluctant and said:]

CHI: En:@i
uhm
Uhm.

EXP: NÍ yào shuāi le -.
2p will fall LE
You are going to fall.

CHI: Ø //diào le.
ø fall LE
It fell!

EXP: Ø diào le -?
ø fall LE
It fell?

EXP: Shénme diào le?
what fall LE
What fell?

CHI: En:@i piáng [: qián] diào le.
uh Money fall LE
Uh, a coin fell down.

First mentions with zero forms when referents are in the child's hands

In addition to the cases of first mentions with zero forms discussed above, first mentions with zero forms also occurred in other situations, such as when referents were in children's hands or were manipulated. Accompanying gestures such as waving the objects or handing them over and immediate context were often necessary for the listener to identify the referents. For example in (16) Mengmeng was drawing a picture. She said *shé le* 'broken' when she broke the pencil. The context clearly indicated that the referent was the pencil in her hand.

(16) Age of MM: 1;10.13

CHI: Ø shé le.
ø break LE
It's broken.

Ø //shé.
 ø break
 It's broken.

In another occasion, in (17), Mengmeng tried to open a cassette. She uttered *Mengmeng dākāi* 'Mengmeng open'. Again, it was obvious from the context that Mengmeng wanted to open the cassette in her hands.

(17) Age of MM: 2;0.0

CHI: Mengmeng dākāi ø. [≠! MM tries to open with
 Mengmeng open ø a cassette in her hands.]
 Mengmeng opens it.

Similar cases were also observed in Dandan's spontaneous speech, shown in (18), (19), (20) and (21) below.

(18) Age of DD: 1;7.25

CHI: Gēge. [≠! DD has a toy in her hands]
 put
 Put!

EXP: Ou@i # ø gē zhè-lí le ?
 uh ø put here-in LE
 Uh, is it put here ?

EXP: "Gēge" # ø gē zài nǎr a?
 put ø put at where Q
 "Put", where is it put?

CHI: Niè [: nà(r)].
 there
 There.

(19) Age of DD: 1;8.10

CHI: Māma mǎi ø a. [≠! DD shows EXP a toy
 mummy buy ø A bought by her mother.]
 Mummy bought it.

(20) Age of DD 1;9.10:

CHI: Dǎ. [≠! DD has a little box in hands.]
 open
 Open!

(21) Age of DD 1;9.10:

[DD brings a walkman to her mother.]

CHI: Mā # ø bù xiǎng le.
 Mummy # ø not loud LE
 Mummy, it does not make sound any more.

Establishing joint reference by attending to the referent without lexically mentioning it

As has been discussed above (also see other researchers, such as Clark, 1978b; McTear, 1985; Deutsch & Pechmann, 1982; Pechmann & Deutsch, 1980, 1982), behaviors that are parallel to verbal behavior, such as gestures and gazing, are not merely an accompaniment, but rather they can be an alternative to speech. Gazing and visual co-orientation are particularly important forms of reference at early phases. Joint reference was also made possible by the fact that the interlocutors followed their children's gaze.

In the situation shown in (22), both Mengmeng and her mother are reading a children's picture book. Her mother's question deictically indicated the girl on the picture and joint attention was thereby established to this referent. Mengmeng does not answer her mother's question, but rather describes the activity which the girl was doing in each case, i.e., *tiào* 'jumping', *hē shuǐ* 'drinking water', *chī bǐngbing* 'eating biscuits'.

(22) Age of MM: 1;4.6

[MM and her mother are reading a children's picture book together.]

MOT: Zhè shì shéi ya?
 this be who Q
 Who is this?

CHI: Ø tiào,
 ø jump
 She is jumping.
 [= on the picture the girl is rope skipping.]

Ø hē shuǐ, [=! turn to the following page.]
 ø drink water
 she is drinking water.

Ø chī bǐngbing. [=! turn to the following page.]
 ø eat biscuit
 she is eating biscuits.

In (23) Dandan attended to the toy she wanted when she said *ná* 'take'. Following the direction of her attention, EXP understood that she wanted the toy and fetched it for her.

(23) Age of DD: 1;7.25

CHI: *Ná.* [=! attending to the table (her toys).]
take
Take!

EXP: *Ná.* [=! gives the toy to DD.]
take
Take!

Another example is given in (24). Mengmeng played with one of her dolls herself. The doll fell down on the ground and she could not reach it. She wanted her father to fetch the doll for her. She said *ná* 'take' while she looked at the doll on the ground. Following her gaze, her father picked up the doll for her.

(24) Age of MM: 1;5.30

CHI: *Ná-'.
take
Take!*

*Ná-'.
take
Take!*

*Ná-'.
take
Take!*

*Ná-'.
take
Take!*

*Ná-'.
take
Take!*

FAT: NI kàn bǎ <mèimei rēng dào dì-shang>
2p look BA young-sister throw to ground-on

[//] <Qing mèimei rēng dào dì-shang.
Qing young-sister throw to ground-on

Look! (you) threw the sister onto the ground ... the sister Qing onto the ground.

[= the sister is used here to refer to the doll.]

In some cases the children attended to more than one object; therefore, the verb itself could not identify the intended referent among the possible referents. Hence, reference was ambiguous in these cases (see examples (25) and (26)). In (25) Dandan wanted to have something on the table where there were several things, including the sewing materials her mother was working with. Dandan said *ná* 'take' while she looked at the table. It was hard for her parents to figure out what Dandan wanted in this situation. Her mother asked her *yào shénme* 'want what'. Dandan kept saying *ná* 'take'. Her mother did not give her anything because she did not know what Dandan wanted. Dandan, then, uttered *en:-@i* 'uhm' because she was not provided with anything and was not satisfied at all. Her father told her *yǒu diǎnr táoqì* '(you are) a little bit naughty' and she did not get anything.

(25) Age of DD: 1;4.6

CHI: eng@i níá [: ná].
uhm take
Uhm, take!

Niá-' [: ná].
take
Take!

MOT: Ø yào shénme ?
ø want what
What do you want?

CHI: Níá [: ná].
take
Take!

CHI: En:-@i.
uhm
Uhm.

FAT: Ø yǒu diǎnr táoqì.
ø exist little naughty
You are a little bit naughty.

Example (26) is another example where reference failed to be established.

(26) Age of DD: 1;7.25

CHI: Meme@b \emptyset //yǎo \emptyset .
 mummy \emptyset bite \emptyset
 Mummy, it/something bites me.

MOT: Shénme yǎo \emptyset ya -?
 what bite \emptyset Q
 What bites you?

CHI: \emptyset yǎo \emptyset .
 \emptyset bite \emptyset
 It bites me.

MOT: \emptyset lǎo hǎn "yǎo".
 \emptyset always shout bite
 You shout "bite" all the time.
 [= MOT does not figure out what bites DD.]

There were several similar cases where joint reference was not established on first mention. It was finally established by adding new non-linguistic information or through adults' inquiry for specific information about the identity of the referent. In example (27), Mengmeng wanted to get a toy airplane from her toy-box. She said *yào* 'want', without mentioning the intended referent. There were several of her toys in the box. Her grandmother picked one up for her, which was not the one Mengmeng wanted. She rejected it with *bú yào* 'not want'. Subsequently, she labeled the toy she wanted, i.e., *fēijī* 'airplane'.

(27) Age of MM: 1;5.30

CHI: \emptyset //yào \emptyset .
 \emptyset want \emptyset
 I want it.

\emptyset //Yào- \emptyset .
 \emptyset want \emptyset
 I want it.

GMO: \emptyset yào něi-ge? [=! picking one toy other than the toy
 \emptyset want which-CL airplane up by chance.]
 Which one do you want?

CHI: \emptyset bú yào \emptyset .
 \emptyset not want \emptyset
 I don't want it!

CHI: Fēijī [!!].
 airplane.
 The airplane!

First mentioning referents with zero forms was often not efficient, especially because no joint attention was established to referents on first mention. As shown in Tables 6.3a and 6.3b above, these uses decreased with age.

In sum, nonverbal behavior is very important for establishing joint reference at the One-word Stage. As has been pointed out (McTear, 1985), situational variables such as visual attending, pointing, and handing gestures, play a part in determining the identity of the referents mentioned in young children's speech. This non-linguistic information is often used to direct the listener's attention to the referents as a clue to identify them. Failure to establish joint reference is observed when the verbal context does not indicate the referent and not enough non-linguistic information is available to identify the referent. Building up joint attention in various ways, both linguistically and non-linguistically, is characteristic of children at this stage.

6.2.2 The Deictic Stage

As shown in Figure 6.1, children from Age Phase 2 on started to produce complex and varied NPs such as nominals with numeral determiners and classifiers, nominals with demonstrative determiners and classifiers, nominals with possessives, demonstrative pronouns and personal pronouns, as well as multi-word utterances. As discussed below, verbal deixis also plays an important role in establishing joint reference at this stage (between Age Phases 2 and 7).

A. Verbal deixis replaces the deictic gestures of the One-word Stage

The first uses of the *proximal* demonstrative pronoun *zhè(-ge)* 'this(-CL)' and of the *distal* demonstrative pronoun *nèi(-ge)* 'that(-CL)' by our subjects were restricted to entities in the immediate situation⁴. Thus, they are termed hereafter *deictic pronouns*. The use of *nèi(-ge)* 'that(-CL)' for a remote referent occurred relatively late (at around Age Phase 8), and will be discussed later in this section.

Deictic pronouns were used to refer to objects in situations where children at the One-word Stage use gestures or gazing. Example (28) shows a situation similar to that in (17) above, where Mengmeng indicated the cassette by gesture. Here Mengmeng used a deictic pronoun *zhè-ge* 'this-CL' to refer to the battery in her hands. The word for the

⁴ Plural deictic pronouns seldom occur in our subjects' spontaneous speech. The discussion will thereafter only focus on the singular forms.

battery *diànchí* 'battery' had not been used by Mengmeng before.

(28) Age of MM: 1;11.12

[EXP puts a battery into a toy of MM. MM picks up another battery and wants to put it into the toy herself.]

CHI: Mengmeng zhuāng zhè-ge.
 Mengmeng put this-CL
 Mengmeng puts in this one.

Deictic pronouns were often used to refer to a novel object for which children have not yet acquired a name. The discussion will focus on the use of predicating constructions such as (*Zhè*) *xiǎo tù* '(This is) a little rabbit' below. Deictic pronouns used for first mentions of referents are given in (29), (30), and (31).

(29) Age of DD: 1;8.10

[DD is walking in a hurry and with difficulty. EXP asked her to walk slowly. She said *zhè-ge* to refer to the toys she wanted].

EXP: Mǎnmǎn zǒu a.
 slowly walk PATL
 Slow down.

CHI: //Zhè-ge.
 this-CL
 This!

(30) Age of DD: 1;10.22

[DD brought a handkerchief to her mother.]

CHI: Ø gěi wǒ dié zhè-ge.
 Ø give 1p fold this-CL
 You fold this one for me.

(31) Age of JJ: 2;6.22

[JJ brought a picture book to EXP].

CHI: Nǐ gěi wǒ jiǎng zhè-ge.
 2p give 1p tell this-CL
 You tell me this one.

No instances of this type were found in Maliang's data. He often used deictic pronouns such as *zhè* 'here' and a bare nominal when first mentioning referents instead. Such uses were also observed in other children's data and will be discussed later.

Children used deictic terms in predicating constructions more often when first mentioning referents or when indicating the location of the referents on first mention.

B. First mention of referents with explicit predicating constructions

One of the important steps in the development of the ability to establish joint reference by young children was the use of NPs in (*explicit*) *predicating constructions* such as *zhè shì píngguǒ* 'this is (an) apple' to introduce referents into the discourse. Examples are given in (32), (33), (34), and (35).

(32) Age of DD: 1;9.25

[DD showed EXP her toys.]

CHI: Zhè shì chānzi.
 this be shovel
 This is a shovel.

(33) Age of ML: 1;8.13

[ML introduces ADU her plastic animal zoo]

CHI: Zhè # xiǎo lù⁵.
 this little deer.
 This is a little deer.

Zhè # yǎnjīng.
 this eye
 this is (its) eye.

(34) Age of JJ: 2;6.22

[JJ tells a story from a picture book and introduces a hare.]

CHI: Zhè # dà bái tù.
 this big white hare
 This is a big white hare.

⁵ In spoken Chinese *shì* 'be' in a nominal sentence can be replaced with a pause. These uses are similar to early copularless predicative constructions in English, e.g., Adam *That Mommy soup* (see Brown, 1973)

(35) Age of JJ: 2;9.11

[JJ and her father read a picture book and tell a story.]

FAT: Zhè # xiǎo xióngmāo.
 this little panda
 This is a little panda.

CHI: Zhè # dà xióngmāo.
 this big panda
 This is a big panda.

Nà yě shì xióngmāo ya.
 that also be panda PATL
 That is also a panda.

Nà yě shì xióngmāo ya.
 that also be panda PATL
 That is also a panda.

Zhè # hǎibào.
 this seal
 This is a seal.

Children did not just name the entity, but rather they intended to establish a topic about the referent or initiate play with the object (e.g., toys) together with the listener. Children also introduced referents with predicating constructions before describing what happened in narratives. As shown in (36), Jiajia used a predicating construction to introduce a referent, namely, *láng* 'wolf', and reference to this character was then maintained by a pronoun *tā* '3p'.

(36) Age of JJ: 2;9.11

[JJ and her father read a picture book and tell a story.]

CHI: Zhè # láng.
 this wolf.
 This is a wolf.

Tā chī shénme?
 3p eat what?
 What does it eat?

A special type of predicating sentence is a *What*-question such as *zhè (shì) shénme?* 'What is this?'. Children frequently initiated a talk about novel entities by raising a

question of this kind in order to direct the listener's attention to novel objects for which they did not know the name. It was more efficient in comparison to the old way, i.e., using a known noun for an novel object, since the known noun could trigger the relationship to the old referent so that the listener would have some difficulty identifying the novel referent. Such uses were also found for children beyond the age of 3;0. Examples are shown in (37), (38), and (39).

(37) Age of JJ: 2;9.11

[JJ tells her father a story from the picture book. She sees a pig-like animal. JJ does not know what it is and asks her father:]

CHI: NI gàosu wǒ zhè shénme zhū?
 2p tell 1p this what pig
 Tell me, what kind of pig is this?

(38) Age of MM: 3;0.11

[MM reads a picture book together with EXP.]

CHI: En@i zhè shénme?
 en@i this what
 Aham, what is this?

EXP: Yòu@i zhè-ge # xiǎo fángzi.
 oh, this-CL small house
 Oh, this is a little house.

(39) Age of MM: 3;2.3

CHI: Zhè shénme ya?
 this what Q
 What's this?

EXP: Zhè xiū zìxíngchē de dōngxi.
 this repair bicycle DE thing
 This is something for repairing bicycles.

C. First mentions of referents with third person pronouns

The third person pronoun *tā* '3p' was initially used to refer to referents in the non-linguistic context and not to an entity already mentioned in the linguistic context. For example, children used the third person pronoun *tā* '3p' to answer wh-questions such as the ones shown in (40) and (41) below. In (40) the referent denoted by *tā* '3p', the

boy, has not been previously mentioned in the discourse.

(40) Age of JJ: 2;6.8

[JJ tells story of a picture book to EXP. On the picture a boy slides down.]

EXP: Shéi huá-xià-lái le?
 who slip-down-come LE
 Who slipped down?

CHI: Tā.
 3p
 He.

In (41) Jiajia initiated the story with *tā-men* '3p-PLU', which was used to refer to the children who had red flowers in their hands on the picture. Then Jiajia referred to the boy who had a green flower in his hand with *tā* '3p'. Both *tā-men* '3p-PLU' and *tā* '3p' were used to indicate the child with red flowers and the child with a green flower in the situation. In other words, first mentions of the referent with the personal pronouns *tā-men* '3p-PLU' and *tā* '3p' were used deictically to denote referents in the situation. Third person pronouns referring to a referent on first mention were also observed in other children's data (see Tables 6.3a and 6.3b).

(41) Age of JJ: 2;7.19

EXP: Nǐ jù gěi āyí jiǎng nà-ge shū.
 2p just give aunt speak that-CL book
 You tell aunt [= EXP] that book.

CHI: Wǒ rèn de hóng huā de shū(?).
 1p know red flower DE book
 I know the book about red flowers.

Tā-men dōu yǒu hóng huā.
 3p-PLU all have red flower.
 They all have red flowers.

Tā yào bái huā.
 3p want white flower
 He wants a white flower.

Third person pronouns were also used on subsequent mentions in relation to the immediate non-linguistic context. The listener often needed information from the non-linguistic context to identify the referent (see 7.4). Children first used pronouns as a

deictic device, rather than as an anaphoric one. More detailed discussion of these uses will be found in the following chapter.

D. First mentions of referents with specification of their location

As has been briefly mentioned earlier in this section, children also used deictic pronouns such as *zhèr* 'here' to indicate referents on first mention. In some cases they also used NPs to specify the location of referents on first mention. Examples are given in (42) to (45). Location in the immediate context was often indicated with the deictic pronouns *zhèr* 'here' or *nàr* 'there', even when the use of deictic pronouns in the situation was not appropriate (see (46)).

(42) Age of DD: 1;7.25

[DD's grandmother gave her some beans and DD put them in her pocket. Some time later, she lost one on the ground and told her grandmother:]

CHI: Nèi yī dòudou.
 there one bean
 There is one bean.

(43) Age of ML: 1;11;13

[ADU asked ML if the toy tank was in front of the little horse or behind it. ML answered 'in front'. Then he pointed to the a toy zebra saying 'zebra is here'.]

ADU: Tǎnkè zài qiánmiàn háishì hòumiàn?
 tank be/at front or behind
 Is the tank in front or behind (of the house)?

CHI: Ø zài qiánmiàn.
 ø be/at front
 It's in front.

<Dà bānmǎ> Dà bānmǎ zài zhèr.
 big zebra big zebra be/at here.
 The big zebra ... The big zebra is here.

(44) Age of JJ: 2;10.13

[JJ told a story to EXP. She introduced an old lady with deictic pronoun for location.]

CHI: Zhèli yī lǎo tàitai # shì ma?
 here one old lady # be Q
 Here is an old lady, isn't it?

(45) Age of MM: 1;4.16

[MM watched TV alone. Her parents were doing something else in the same room.]

CHI: *Dìndiàn* xiǎo māomao.
 Television little cat
 (There is) a little cat (on) television.

(46) Age of DD: 1;7.25

[EXP just came to DD's home. She did not see her mother.]

EXP: Māma shàngbān a -?
 mother go-to-work Q
 Has mummy gone to work?

CHI: En@i māma zài zhèr.
 um mother be/at here.
 Um, mummy is here.

EXP: Māma zài zhèr?
 mother be/at here
 Is mummy here?

[After DD told EXP 'mummy is here', she went to the bed room.]

EXP: Ou@i, māma zài //zhèr.
 um, mother be/at here
 Um, (your) mummy is here!

CHI: Māma, māma!
 mummy mummy
 Mummy! Mummy!
 [= CHI calls her mother.]

E. Uses of underspecified forms for referents which need to be more specific

Children at this stage sometimes used underspecified forms for referents which needed to be specific. In such situations, reference was ambiguous or was not identifiable. For example, although children did use nominals with *distal* (not *proximal*) demonstrative determiners and classifiers to refer to referents not in the here-and-now context, they

used them also to refer to remote referents, regardless of whether these referents were mutually known to the listener. When there was no mutual knowledge, referents were not identifiable by the listener. Such examples are shown in (47) below and in (2) earlier in this chapter. In (47) EXP asked Mengmeng about her visit to a kindergarten the week before. They talked about boys with which Mengmeng played, but did not mention any specific boy. Mengmeng used *nèi-ge xiǎo gēge* 'that-CL little boy' to refer to a particular boy who took toys from her. It was impossible for the listener (EXP) to identify that boy. In (2) Mengmeng used preverbal NPs *nèi-ge xiǎo gǒu* 'that little dog' and *nèi-ge* 'that one' on first mention to denote referents that were not in the here-and-now. Neither nonverbal information nor previous verbal information was sufficient for the identification of the referents denoted by *nèi-ge xiǎo gǒu* 'that-CL dog' and *nèi-ge* 'that-CL'. Similar cases also occurred in our discussion of first mentions consisting of zero forms, bare nouns, and deictic pronouns above, which will not be repeated here.

(47) Age of MM: 3;1.10

[MM and EXP talk about the children in the kindergarten they visited a few days ago.]

EXP: *Nèi-xiē xiǎo gēge # tā-men xǐhuan*
 that-CL little elder-brother # 3p-PLU like

nǐ ma ?
 2p Q

Those little boys, do they like you?

CHI: *Ayí # nèi-ge xiǎo gēge qiǎng*
 aunt # that-CL little elder-brother grab

wǒ-de wányù le.
 1p-DE toy LE

Auntie, that little boy grabbed my toys.

From Age Phase 8 on, children seemed to know that only nominals with *distal* demonstrative determiners and classifiers or *distal* deictic pronouns could be used for remote referents. They may not have known yet that first mentions of referents with NPs containing *distal* deictic elements can only be used to denote referents that are mutually known to the listener, or they used them like *proximal* deictic devices to denote remote referents deictically.

Cases of proper names (without additional descriptive information) used by children for referents with which the listener did not share any background knowledge

were also recorded. In example (48) below, Mengmeng mentioned a person with proper name Dawei (not a family member) who was unknown to the investigator. EXP showed that she did not know the person called Dawei. Mengmeng tried to add some information about Dawei, but she did not succeed in doing so. Rather she mentioned another unidentifiable person using *yī-ge shūshu* 'one-CL uncle' and went on talking about things related to Dawei, who might work together with Dawei.

(48) Age of MM: 3;0.5:

CHI: Zhè shì shéi gěi wǒ de, nǐ shuō -.
 this be who give 1p DE 2p said/guess
 Guess who gave this to me?

EXP: Dà bó -?
 big uncle
 The (or Your) big uncle ?

Shì ma?
 be Q
 Right?

CHI: Duì.
 right
 Right!

Bú shì Dawei.
 not be Dawei.
 It's not Dawei (who give me that).

EXP: Bú shì //Dawei ao -?
 not be Dawei Q
 It's not Dawei?
 [= EXP does not know who Dawei is.]

Shì //Dawei ao ?
 be Dawei Q
 (Do you talk) about Dawei?
 [= EXP wonders if MM talked about Dawei?]

CHI: Dawei shì gēn yī-ge shūshu yīkuà.
Dawei be with one-CL uncle together.
Dawei was together with an uncle.

Mengmeng and Duanlian, who went to kindergarten daily, also used proper names to talk about their friends in kindergarten without any explanation for their listeners who

did not know the friends at all. Therefore, children failed to select appropriate forms to denote referents on first mention from time to time before Age Phase 9.

F. Other forms

As shown in Tables 6.3a and 6.3b, nominals with numeral determiners and classifiers were occasionally used by children before Age Phase 8. However, the use of these forms increased with age. Nominals with numeral determiners and classifiers are devices for referent introductions in the adult system, which children have to learn for efficient communication. The use of nominals with numeral determiners and classifiers on first mention will be discussed in relation to the next stage in Section 6.2.3 below.

In sum, children between Age Phases 2 and 7 mainly introduce referents deictically. The identification of referents on first mention often depends on non-linguistic information. Children sometimes also use an underspecified form for a referent which needs to be further specific.

6.2.3 The Transitional Stage

Deictic means of referent introductions, which were frequent at the Deictic stage, were still used by the children during the next stage (hereafter 'transitional' stage). However, the major difference with the deictic stage is that the use of deictic pronouns for the first mention of referents decreased while the use of nominals with numeral determiners and classifiers increased (see Tables 6.3a and 6.3b). The uses of deictic means for referent introductions at the transitional stage were similar to those observed during the deictic stage; hence, they will not be discussed further.

An important development of the transitional stage is children's increasing use of nominals with numeral determiners and classifiers for referent introductions. As discussed in Chapter 3, Chinese nominals with numeral determiners and classifiers are mainly used as a device to introduce referents into discourse. However, our subjects initially used them to refer to nonspecific (mainly, nonspecific-potential) reference (see Chapter 5). The use of these devices for specific reference occurred relatively late (between Age Phases 4 and 6) in comparison to their use for nonspecific reference around Age Phase 2. Figure 6.3 shows a further analysis of nominals with numeral determiners and classifiers in terms of whether they are used for nonspecific reference, for specific new reference or for specific given reference. In several age phases, less than ten nominals with numeral determiners and classifiers were recorded. As before, we marked these age phases with parentheses in the figure.

As Figure 6.3 shows, nominals with numeral determiners and classifiers were not used productively before Age Phase 6 and not a single case was found at Age Phase 2

for Mengmeng. This type of NP was used only for nonspecific reference before Age Phase 4, from mainly for nonspecific reference to mainly for specific reference from Age Phases 4 through 6, and mainly for SPECIFIC reference after Age Phase 6. Their uses increased with age for specific reference, but decreased with age for nonspecific reference. Furthermore, nominals with numeral determiners and classifiers were mainly used for specific new reference, but rarely for specific given reference (see the bars indicated with RNEW versus RMUK in Figure 6.3).

In spite of the fact that nominals with numeral determiners and classifiers were related to the first mention of specific referents, less than 20% of first mentions consisted of this type of NP (see Tables 6.3a and 6.3b). They were not yet the main device for referent introductions before Age Phase 9, i.e., the age of three-and-a-half years. Therefore, we need to ask the following question:

Was children's use of nominals with numeral determiners and classifiers for first mentions random?

The answer is no. Most of them were used in narratives, either in stories from picture books (referents in the here-and-now context) or in stories without corresponding picture books (referents not in the here-and-now context). They were sometimes used in discourse other than narratives, e.g., Jiajia used *yī-zhāng móxíng* 'one-CL model' to introduce a model provided as an illustration to EXP (see (49)) and *yī-ge shū* 'one-CL book' to bring new information to the listener (see (50)).

(49) Age of JJ: 2;6.22

[EXP was building up a garden for JJ. JJ fetched a model provided as an illustration and introduced it with *yī-zhāng móxíng*. Then she commented that what EXP built up was not same as the model provided as an illustration.]

CHI: *Yī-zhāng móxíng*
 one-CL model
 A model.

Yī-zhāng móxíng
 one-CL model
 A model.

Yī-zhāng móxíng.
 one-CL model
 A model.

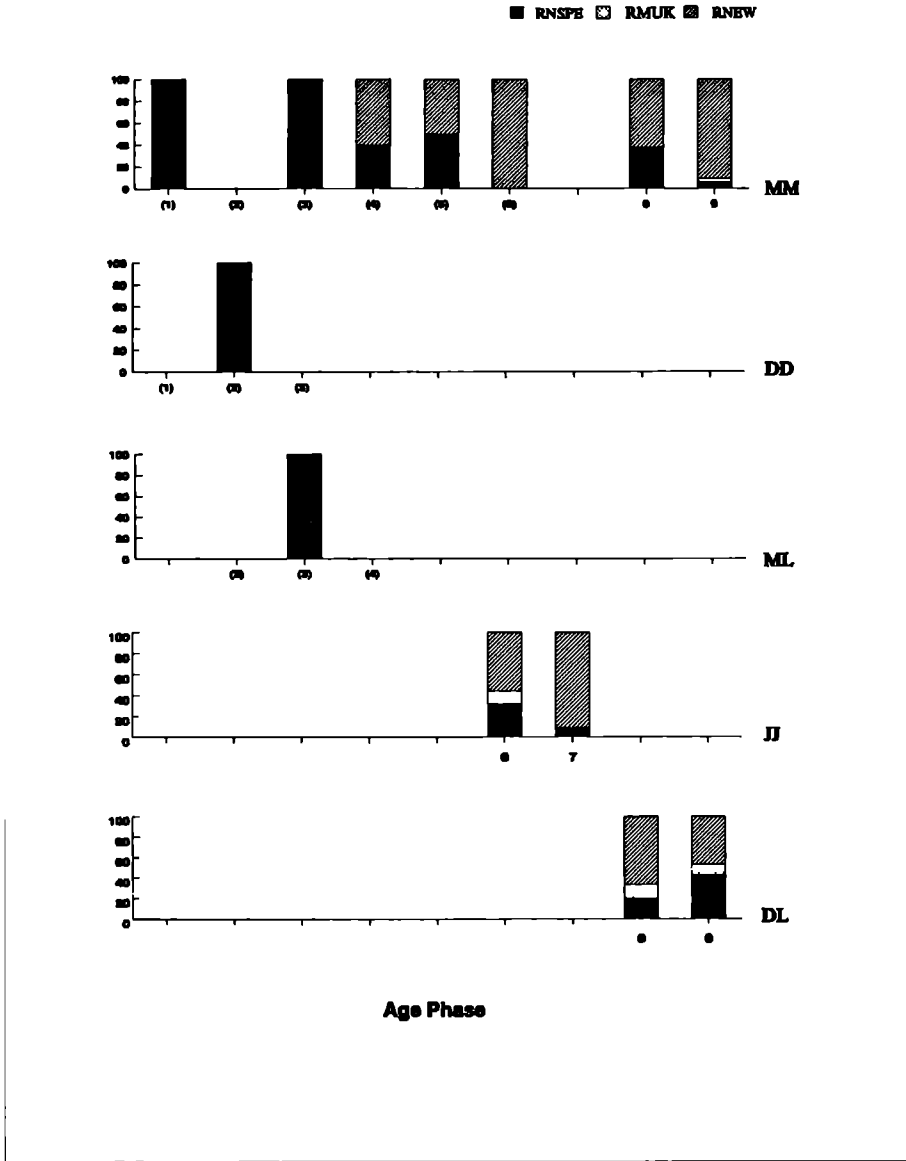


Figure 6.3 Proportions of nominals with numeral determiners and classifiers used for nonspecific (RNSPE), specific new (RNEW), and specific given (RMUK) reference in five children

ø hé wǒ zhè bù yīyàng.
 ø with 1p this not same
 It is not the same as mine.

(50) Age of JJ: 2;7.0:

[JJ's grandmother knocks at the door. JJ opened the door and received a book from her grandmother, then told EXP:]

CHI: Tā sòng yī-ge shū gěi wǒ kàn.
 3p send one-CL book give 1p read
 She sends me a book to read.

In narratives, children often introduced referents which occurred at the beginning of the story (often protagonists) explicitly by means of nominals with numeral determiners and classifiers. For example, In (51) Jiajia began a story *A Bear and Two Children* with *cóngqián yǒu ge xiǎo gūniang jiàozuò Jinhua* 'long long ago there was a little girl called Jinhua' (also see Story One in Appendix II ⁶). In (52) Duanlian began the story *A Mother Rabbit with Her Three Baby Rabbits* with *tù māma yǒu sān-gè hái zi, yī-ge jiào Hóngyǎnjīng, yī-ge jiào Duǎnwěiba, yī-ge jiào Chángěrdou* '(a) mother rabbit has three children. One is called Red Eye, One is called Short Tail, One is called Long Ear', (also see Story Three in Appendix II). However, referents entering into the story later were often denoted by bare nominals, e.g., *yáng* 'sheep' in (53) and *kuāng* 'basket' in (54) (also Story One in Appendix II), *miànbāoquān* 'pretzel' and *xiǎo gǒu* 'little dog' in (55) (also in Story Two in Appendix II), and *dàhúiláng* 'wolf' in (56) (also Story Three in Appendix II).

(51) Age of JJ: 2;8.17

CHI: Cóngqián yǒu ge xiǎo gūniang
 before exist CL little girl
 jiàozuò Jinhua.
 be-called Jinhua

Once upon a time, there was a little girl named Jinhua.

⁶ Three entire narratives are given in Appendix II. These stories are called: "A Bear and Two Children" (JJ2;8.17), "A Seven Color Flower" (MM3;0.5), "A Mother Rabbit and Her Three Baby Rabbits" (DL3;3.28).

(52) Age of DL: 3;3.28

CHI: Tù māmā yǒu sān-ge háizi,
 rabbit mother have three-CL kid
 Mother rabbit had three children.

Yī-ge jiao Hóngyǎnjīng,
 one-CL call Red Eye.
 One was called Red Eye.

Yī-ge jiào Duǎnwěiba,
 one-CL call Short Tail,
 One was called Short Tail,

Yī-ge jiào Cháng'ěrduo.
 one-CL call Long Ear.
 And one was called Long Ear.

(53) Age of JJ: 2;8.17

CHI: Tā-men ne # bǎ yáng guān huí jiā
 3p-PLU PATL BA sheep enclose return home
 They locked the sheeps into the house.

(54) Age of JJ: 2;8.17

CHI: Ø guò-qù ná kuāng le.
 Ø over-go take basket LE
 (She) went over to fetch a/the basket.

(55) Age of MM: 3;0.5

CHI: Tā lín-zhe miànbāoquār huí jiā qù le.
 3p carry-ZHE pretzel return home go LE
 She went home carrying pretzels.

CHI: Hòulái xiǎo gǒu kàn-jàn Ø le.
 later little dog see-ASP Ø LE
 Later, a little dog saw it.

(56) Age of DL: 3;3.28

CHI: Guò le yīhǔr # dàhuīláng lái le.
 past LE a-while wolf come LE
 After a while, a wolf came.

As has been discussed before (see 2.5 and 6.1), the speaker may open a conversation

about a new or a given referent (as a topic), and then provide new information about it. **New** referents have to be introduced by means of nominals with numeral determiners and classifiers, while **given** referents may be introduced with a range of other NPs, including bare nouns, nominals with possessives, and nominals with demonstrative determiners and classifiers. An analysis of how children introduced new referents is provided in Table 6.4 which shows the proportion of new referents introduced by means of nominals with numeral determiners and classifiers. Among the five children only Mengmeng at Age Phase 9 introduced more than 50% (55%) of new referents by means of nominals with numeral determiners and classifiers. Overall, the use of nominals with numeral determiners and classifiers for new referents did not reach the productive criterion discussed in 6.1.

With respect to NP position in relation to the verb in the utterance (cf. 2.4), nominals with numeral determiners and classifiers can **ONLY** be used to denote new referents (when reference is specific), and they must be placed in postverbal position. However our subjects used **preverbal** nominals with numeral determiners and classifiers for new referents when they were in agent role. In telling a story (see Appendix Story Two), Mengmeng used preverbal *yī-wèi lǎo bóbo* 'one-CL old man' to refer to the man on first mention (see (57) below). Using preverbal nominals with numeral determiners and classifiers for the first mention of new referents is 'clearly inappropriate in Chinese from a pragmatic point of view' and they most verbally 'constitute deictic uses' (Hickmann, Liang, & van Crevel, 1989:15).

(57) Age of MM: 3;0.5

CHI:	Hòulái	<yī-ge> [//]	yī-wèi	lǎo	bóbo	lái	le.
	later	one-CL	one-CL	old	man	come	LE
	Then, an old man came.						

6.2.4 Summary

In summary, as shown in Sections 6.2.1, 6.2.2, and 6.2.3, the three stages predicted from the quantitative analysis of the data collected with all five children (see 6.2.1) were supported by the qualitative analysis. Children at Age Phase 1 mainly used words accompanied by deictic gestures to indicate their intended referents on first mention. Verbal deixis replaced the function of deictic gestures when introducing referents between Age Phases 2 and 7. At around Age Phase 8 children began to show signs that they were attentive to the adult devices, using nominals with numeral determiners and classifiers and postverbal position to introduce referents. However, these uses were not productive before Age Phase 9. They were limited to particular contexts, e.g., introducing referents at the beginning of narratives.

Table 6.4 Proportion of new referents introduced by means of nominals with numeral determiners and classifiers (num-cl-N)

Child	Age Phase	1	2	3	4	5	6	7	8	9
MM	num-cl-N	(0)	(0)	(0)	(0)	(0)	(0)		8%	55%
	Total	3	1	2	5	7	0		25	42
DD	num-cl-N	(0)	(0)	(0)						
	Total	0	3	4						
ML	num-cl-N		(0)	(0)	(0)					
	Total		2	3	0					
JJ	num-cl-N						8%	4%		
	Total						59	28		
DL	num-cl-N								33%	18%
	Total								24	104

* The frequencies are shown in parentheses when the total number of specific new referents was less than ten cases.

6.3 Conclusion

With respect to NP position in relation to the verb (cf. section 6.1), the vast majority of referent introductions at the initial stage (the One-word Stage), were labellings in verbless constructions. Referent introductions with utterances containing verbs increased with age. Referent introductions consisting of labellings decreased with age, and they were rarely used after the age of three years. Before the age of three years, children did not rely on the **pragmatic factor of information status** for the first mention of referents. Instead, they relied on the **semantics of the utterance** to choose NP position when constructing discourse, including when mentioning referents for the first time. The use of postverbal position for the first mention of referents increased with age after the age of the age of three years, but it was not productive. The use of existential presentative constructions for the first mentions of referents occurred between the age of two-and-a-half years and three-and-a-half years. These uses were found to be consistent with the pattern of the adult language, but they have not yet been entirely analyzed by the children. They were used only in some contexts, mainly to introduce

referents at the **beginning** of narratives.

With respect to forms (cf. section 6.2), children before the age of one-and-a-half years mainly used bare nouns combined with deictic gestures to establish joint reference. They showed that they were attentive to some degree to whether or not the listener had attended to the intended referent before further talking about it. Children between the age of one-and-a-half years and three years consistently introduced referents with deictic means. However, in most of the cases, verbal deixis replaced the function of deictic gestures. To identify referents on first mention, the listener often had to depend on the information available from non-linguistic context. Cases of ambiguous reference or unidentifiable reference were observed when children used an underspecified (or maximally presupposing) form for the first mention of a referent. Children shortly before three years, began to use nominals with numeral determiners and classifiers to introduce new referents. However, such uses were not productive (see Table 6.4), and these NPs were sometimes used in a deictic way. To identify referents, it was often necessary to rely on non-linguistic information.

With respect to the acquisition of linguistic means for referent introductions, the uses of both postverbal position and nominals with numeral determiners and classifiers were initially related to some function of these devices, but not all. Both of these devices were first used for referent introductions in narratives. Children before the age of three-and-a-half years used neither postverbal position nor nominals with numeral determiners and classifiers productively for the first mention of referents. Therefore, children under the age of three-and-a-half years have not acquired nominals with numeral determiners and classifiers or postverbal position as devices in the language for introducing referents.

These findings suggest that cognitive development has an impact on language development. Children's first uses of both postverbal position and nominals with numeral determiners and classifiers for referent introductions in narratives are due to the fact that they have not yet developed a full concept of newness. They only have a limited notion of new referents and encode referent introductions only in a limited set of contexts, namely narrative contexts, where referent introductions constitute salient 'ritualized' uses.

Comparing the results of the current study to that of Brown (1973), our subjects used nominals with numeral determiners and classifiers less than 60% in cases where such forms are required in the target language. In comparison, Brown's subjects used definite and indefinite articles correctly 90% of the time. This difference may be due to the fact that in English articles are required for singular nouns, while in Chinese determiners are not obligatory for nominals at all. The frequency of the uses of determiners (or articles) in the two input languages might affect children's acquisition of these devices. Therefore, these results reflect the influence of language-specific

factors in language development.

A controversial issue in previous research has been the extent to which young children are egocentric (cf. Chapter 3). Ever since Piaget (1926), it has been assumed that children are unable to decenter, i.e., to abstract from their present perspective and to take into consideration the other's point of view. This study also finds that even children at the one-word stage are attentive to the necessity of establishing joint reference. When reference is not established, children do not continue to talk about referents. This finding may be evidence that **they may not be egocentric** in the early stages. However, note that Piaget's criteria for egocentricity versus decentering were quite strict in comparison to ours, given that the data were collected in different situations; for example, Piaget examined children's productions not only in naturalistic situations, but also in more controlled experimental situations; in contrast, our entire corpora are based on naturalistic conversation data. This methodological difference might account for some divergence in the conclusions. Thus, Deutsch and Pechmann (1982) showed that, although younger children produce ambiguous descriptions of objects more often than older children or adults, further dialogue between speaker and addressee can frequently resolve such ambiguities successfully.

Nonetheless, the following point should be noted. Two aspects of children's skills must be distinguished: children's general cognitive development, including their sensitivity to the need for cooperation among interlocutors in communication, e.g., their sensitivity to the others' point of view; their linguistic ability to make use of appropriate forms when communicating with their addressee, including their acquisition of the means necessary to mark givenness and newness (Deutsch & Pechmann, 1982; Hendriks, 1993). Our data showed that the children at the One-word Stage are sensitive to some extent to the need for cooperation (i.e., joint attention), e.g., they dropped the topic about the intended referent if it could not be identified by the listener. On the other hand, our results also showed that children before the age of three-and-a-half years did not always take their listener's point of view into account. In particular, they did not introduce NEW referents productively with explicit linguistic forms, i.e., by means of postverbal nominals with numeral determiners and classifiers.

In general, our results suggest that children before the age of three-and-a-half years are not truly egocentric, at least in the particular situations examined, since they minimally show the basic ability to ensure joint attention in conversation. However, they also show their inability to introduce new referents in the universe of discourse in such situations. Although this inability might reflect a general lack of cognitive decentering, an important component of this difficulty is the fact that they have not yet acquired the linguistic devices necessary in their language to mark newness in discourse, except in some limited contexts.

7 Learning to Maintain Reference

7.0 Introduction

In the previous chapter we analyzed how young Chinese children learn to introduce referents. We now turn to how they maintain reference to the introduced entities in discourse, with particular attention to what NP forms they use and prefer in reference maintenance, the position of these NPs in relation to verbs, and whether they choose different forms when the most recent mention of the referent is in the immediately preceding utterance (i.e., *coreferential context*) or in a non-immediately preceding utterance (i.e., *non-coreferential context*). As discussed in Chapter 6, referent introductions by children under 3;6 are mainly deictic. In order to identify the referents introduced by children, the listener often needed to make use of non-linguistic information such as following the child's attention or gesture. In other words, the identity of referents is greatly tied to the immediate non-linguistic context. Therefore, in addition to the above questions summarized in 1, 2 and 3 below, this chapter also discusses a fourth question shown in 4 below:

1. What forms are used for maintaining reference and is the distribution of the forms for reference maintenance similar to the one for referent introductions?
2. Are the forms used for subsequent mentions distributed equally with respect to their positions in relation to verbs?
3. Do children choose different forms to denote a referent when its most recent mention is in the immediately preceding utterance (*coreferential context*) and when its most recent mention is in the non-immediately preceding utterance (*non-coreferential context*)?
4. Do children maintain reference in discourse deictically or anaphorically?

We will proceed as follows. Section 7.1 presents the results of which NP forms the children used for maintaining reference in discourse, which will be compared to those the children used for introducing referents. Section 7.2 presents the results of NP forms used for referents on subsequent mention in terms of NP positions in relation to the

verb. Section 7.3 presents results of NP forms used for referents when its most recent mention is in the immediately preceding utterance as well as when its most recent mention is in a non-immediately preceding utterance. In Section 7.4 we will discuss the nature of children's reference maintenance, i.e., whether it is deictic or anaphoric. Section 7.5 summarizes the findings of Sections 7.1, 7.2, 7.3, and 7.4.

7.1 Reference maintenance and forms

Chapter 2 discussed the fact that Chinese speakers use more explicit forms (e.g., nominals with numeral determiners and classifiers) for referent introductions, and use less explicit forms (e.g., pronominals, as well as zero forms) to maintain reference in discourse. In contrast to languages such as English, Chinese has only ONE third person singular pronoun *tā* '3p', which does not express gender and animacy information (cf. 2.1). Using pronominals and zero forms causes ambiguity in identifying the referent, therefore, NPs are preferred for maintaining reference.

First of all, we will examine what types of NPs were used by our subjects for maintaining reference in discourse. The NP forms used for referents on subsequent mention fall into five groups: (1) nominals with numeral determiners and classifiers (num-cl-N); (2) other nominals, including bare nouns, nominals with demonstrative determiners and classifiers, nominals with possessives, and proper names, (hereafter nominals, which excludes nominals with numeral determiners and classifiers) (other-N); (3) third person pronouns (p-PRO); (4) other pronouns (e.g., deictic pronouns) (d-PRO); (5) zero forms (ZERO). CLAN programs were used to compute the proportion of NPs used for referents on subsequent mention of referents as a function of forms (see Table 7.1). Referring expressions denoting referents on subsequent mentions in answering questions are excluded.

Table 7.1 shows that (1) nominals with numeral determiners and classifiers were rarely used for maintaining reference across all children at all Age Phases; (2) nominals were among the most frequently used NPs for maintaining reference in discourse; however, the proportion of nominals used for subsequent mention was influenced by the proportion of other NPs, e.g., pronouns and zero forms. Between 33% and 73% of subsequent mentions consisted of nominals for Mengmeng; between 46% and 65% for Dandan; between 51% and 62% for Maliang; between 46% and 57% for Jiajia; and between 45% and 51% for Duanlian; (3) third person pronouns rarely occurred before Age Phase 4. However, the proportion of subsequent mentions consisting of third person pronouns increased with age after Age Phase 6; (4) the proportion of subsequent mentions consisting of deictic pronouns varied with age. Interestingly, there was a peak in the proportion of deictic pronouns between Age Phases 4 and 5 (i.e., 16% for Mengmeng at Age Phase 5 and 14% for Maliang at Age Phase 4); (5) like nominals,

Table 7.1 Distribution of different types of noun phrases used for reference maintenance in each of Mengmeng's (MM), Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases

Child	Age Phase	Total (no.)	num-cl-N (%)	other-N (%)	p-PRO (%)	d-PRO (%)	ZERO (%)
MM	1	78	0	73	0	1	26
MM	2	42	0	64	0	0	36
MM	3	41	0	46	0	0	54
MM	4	173	0	50	8	5	37
MM	5	38	0	40	5	16	40
MM	6	11	0	55	0	9	36
MM	7	(no data)	-	-	-	-	-
MM	8	207	0	33	11	6	49
MM	9	331	1	40	11	7	42
DD	1	17	0	65	0	0	35
DD	2	116	0	46	0	3	52
DD	3	92	0	50	1	5	44
ML	2	88	0	57	2	0	41
ML	3	74	0	62	1	1	35
ML	4	35	0	51	6	14	28
JJ	6	831	1	46	15	4	34
JJ	7	456	0	57	11	2	31
DL	8	132	2	45	5	6	42
DL	9	447	1	51	13	4	30

zero forms were one of the most frequently used NPs for subsequent mentions. The proportion of such subsequent mentions varied from age to age, oscillating between 26% and 54% of subsequent mentions with zero forms for Mengmeng; between 35% and 52% for Dandan; between 28% and 41% for Maliang; between 31% and 34% for Jiajia, and between 30% and 42% for Duanlian.

When comparing the above results with those of referent introductions (see Table 6.3a and 6.3b), the following points emerge: First, nominals with numeral determiners and classifiers were used increasingly for referent introductions after Age Phase 6, but rarely for reference maintenance at any age. Second, among subsequent mentions, between 26% and 54% consisted of zero forms, while zero forms used for first mentions decreased with age: after Age Phase 8 less than 10% of first mentions consisted of zero forms.

However, because the total amount of first mentions was different from that of subsequent mentions we cannot draw the conclusion that children preferred to use one type of NPs for subsequent mentions and another type for first mentions.

In order to find out whether the children preferred to use some types of NPs for maintaining reference in discourse, (e.g., personal pronouns and zero forms) and other types of NPs, (e.g., nominals with numeral determiners and classifiers) for introducing referents, distribution of nominals, third person pronouns, deictic pronouns, and zero pronouns was examined as a function of whether these NPs were used for first versus subsequent mentions. The results are shown in Tables 7.2a and 7.2b below. When the total is less than 10, frequencies are given instead of percentages.

NOMINALS

First, let us investigate the use of nominals. Mengmeng used nominals (see Table 7.2a column "nominals") between 16% and 65% for first mentions and between 35% and 84% for subsequent mentions. On the average, nominals were used more for subsequent mentions than for first mentions. Nominals used by Dandan (see Table 7.2b column "nominals") for subsequent mentions were almost twice as frequent as for first mentions. The uses of nominals by Maliang (see Table 7.2b column "nominals") for subsequent mentions were three times as frequent as for first mentions. Jiajia used more nominals for subsequent mentions (60% and 61% at Age Phases 6 and 7, respectively) than for first mentions (40% and 39% at Age Phase 6 and 7, respectively). Duanlian used nominals for subsequent mentions (49%) as frequently as for first mentions (51%) at Age Phase 8. Nominals were used slightly more for first mentions (53%) in comparison to subsequent mentions (47%) at Age Phase 9.

On the average, nominals were used slightly more for subsequent mentions of referents than for first mentions. However, recall that a considerable amount of bare nouns were used for the first mention of referents, as shown earlier in this chapter.

Table 7.2a Proportions of nominals, third person pronouns, deictic pronouns, and zero forms used for first and subsequent mentions in each of Mengmeng's (MM) age phases

Child	Age Phase	nominals			third person pronouns			deictic pronouns			zero forms		
		Total (no.)	FM	SM	Total (no.)	FM	SM	Total (no.)	FM	SM	Total (no.)	FM	SM
MM	1	78	35%	65%	0	0	0	1	0	1	5	1	4
MM	2	32	16%	84%	0	0	0	3	3	0	15	0%	100%
MM	3	34	44%	56%	0	0	0	1	1	0	24	8%	92%
MM	4	150	43%	57%	14	0%	100%	12	25%	75%	67	4%	96%
MM	5	38	60%	40%	3	1	2	11	45%	55%	17	12%	88%
MM	6	17	65%	35%	1	1	0	2	1	1	6	2	4
MM	7	-	-	-	-	-	-	-	-	-	-	-	-
MM	8	205	64%	36%	30	23%	77%	27	52%	48%	105	3%	97%
MM	9	268	50%	50%	36	3%	97%	37	63%	37%	147	6%	94%

Table 7.2b Proportions of nominals, third person pronouns, deictic pronouns, and zero forms used for first and subsequent mentions in each of Dandan's (DD), Maliang's (ML), Jijia's (JJ), and Duanlian's (DL) age phases

Child	Age Phase	nominals			third person pronouns			deictic pronouns			zero forms		
		Total (no)	FM (%)	SM (%)	Total (no.)	FM	SM	Total (no.)	FM	SM	Total (no.)	FM	SM
DD	1	16	31%	69%	0	0	0	0	0	0	9	3	6
DD	2	72	26%	74%	0	0	0	14	79%	21%	72	17%	83%
DD	3	73	37%	63%	1	0	1	10	50%	50%	46	13%	87%
ML	2	66	24%	76%	2	0	2	0	0	0	36	0%	100%
ML	3	59	22%	78%	2	1	1	2	1	1	27	4%	96%
ML	4	25	28%	72%	3	1	2	8	3	5	14	29%	71%
JJ	6	608	40%	60%	150	4%	96%	62	47%	53%	297	5%	95%
JJ	7	423	39%	61%	79	38%	62%	18	56%	44%	144	1%	99%
DL	8	120	51%	49%	7	0	7	18	62%	38%	61	8%	92%
DL	9	426	47%	53%	61	5%	95%	34	44%	56%	139	5%	95%

THIRD PERSON PRONOUNS

No third person pronouns were used by Mengmeng before Age Phase 4. All 14 occurrences of third person pronouns were used for subsequent mentions of referents at Age Phase 4; out of three third person pronouns two were used by Mengmeng for subsequent mentions at Age Phase 5; and the only occurrence recorded at Age Phase 6 was a first mention. Among 30 occurrences of third person pronouns 77% were used for maintaining reference in discourse at Age Phase 8; and among 37 occurrences of third person pronouns, 97% were used for maintaining reference in discourse at Age Phase 9. Only one third person pronoun was recorded during the period of our visiting Dandan. It occurred at Age Phase 3 and was used for a subsequent mention. Maliang had altogether seven third person pronouns found in the data we analyzed (i.e., between Age Phases 2 and 4). Five of them were used for subsequent mentions and two for first mentions. Among 150 third person pronouns used by Jiajia at Age Phase 6, 96% were used for subsequent mentions, and among 79 third person pronouns recorded at Age Phase 7, 62% were used for subsequent mentions. At Age Phase 8, Duanlian used all seven occurrences of the third person pronoun *tā* '3p' for subsequent mentions, among 61 third person pronouns recorded at Age Phase 9, 95% were subsequent mentions.

Overall, children strongly preferred to use the third person pronoun *tā* '3p' to refer to entities which had been introduced in previous discourse. However, they were sometimes used by the children for the first mention of referents, especially before Age Phase 8 (i.e., the age of 3;0).

DEICTIC PRONOUNS

As shown in the column "deictic pronouns" in Tables 7.2a and 7.2b, the proportion of deictic pronouns used for the first and subsequent mentions of referents varied from age to age for all the children.

Mengmeng used deictic pronouns for referents both on first mention and on subsequent mention. Sometimes they were more frequent for first mentions (at Age Phases 2, 3, 8, and 9), sometimes for subsequent mentions (at Age Phases 1, 4, and 5). Dandan used no deictic pronouns at Age Phase 1; deictic pronouns were used more for first mentions (79%) than for subsequent mentions (21%) at Age Phase 2; 50% were used for first mentions and 50% for subsequent mentions at Age Phase 3. Maliang had altogether only 10 deictic pronouns found in the data we analyzed (i.e., Age Phases 2 to 4): 40% were used for first mentions and 60% for subsequent mentions. Jiajia used deictic pronouns for first mentions (47%) slightly less than for subsequent mentions (53%) at Age Phase 6; however, deictic pronouns were used slightly more for first mentions (56%) than for subsequent mentions (44%) at Age Phase 7. Duanlian used

more deictic pronouns for first mentions (62%) than for subsequent mentions (38%) at Age Phase 8; however, fewer deictic pronouns were used for first mentions (44%) than for subsequent mentions (56%) at Age Phase 9.

On the average, children did not show a preference for using deictic pronouns either in referent introductions or in reference maintenance. These devices were used both for first and subsequent mentions.

ZERO FORMS

The columns "zero forms" in Tables 7.2a and 7.2b show the proportions of zero forms used for the first and subsequent mentions of referents. Zero forms were mainly used for subsequent mentions and only occasionally used when talking about referents in the here-and-now for the first time.

The proportions of zero forms used for entities previously mentioned in discourse varied from age to age, for Mengmeng, oscillating between 88% and 100%. From Age Phase 8 on, most zero forms, 97% at Age Phase 8 and 94% at Age Phase 9, were used for maintaining reference. Dandan used zero forms for subsequent mentions more and more with age: six among the nine occurrences at Age Phase 1, 83% at Age Phase 2, and 87% at Age Phase 3 were used in this way. Most zero forms used by Maliang consisted of subsequent mentions: all zero forms at Age Phase 2, 96% at Age Phase 3, and 71% at Age Phase 4. Jiajia used zero forms 95% and 99% for subsequent mentions at Age Phases 6 and 7, respectively. Duanlian's zero forms were used 92% and 95% for subsequent mentions at Age Phases 8 and 9, respectively.

Overall, zero forms were strongly preferred for reference maintenance in discourse. In addition, the amount of zero forms for first mentions decreased with age on the average.

In sum, it seems to be the case that young children (like adults) favor the use of lean forms, e.g., pronouns and zero forms, for referents which have been previously introduced into discourse, but not for the first mention of referents. Nominals were used either for first mentions or for subsequent mentions, although they were twice as frequent for subsequent mentions as for first mentions. Deictic pronouns were used by our subjects to introduce referents into discourse, as well as to maintain reference to them into discourse.

7.2 Forms for reference maintenance and their positions in relation to verbs

In this section, we will focus on the implications of the fact that relatively lean NPs (cf. the scale shown in (8) of Chapter 1) tend to occur in preverbal and/or sentence-initial position. This phenomenon has been reported by the studies of languages such as

English (Prince, 1981) and has been also observed in Chinese (Chen, 1986, 1987; Li & Thompson, 1979; Tsao, 1977). Interactions between NP forms and their position in relation to the verb used for referents on subsequent mentions are analyzed (see Table 7.3a and 7.3b below).

NOMINALS

First of all, as shown in the column "nominals" in Tables 7.3a and 7.3b, nominals used for subsequent mentions in verbless labelling (such as *zhèr xiǎo niǎo* 'here little bird' or *xiǎo niǎo* 'little bird', hereafter PRED) were frequently found in the production of the three children under the age of 2;0, i.e., Mengmeng, Dandan, and Maliang. Such uses decreased with age. However, the proportions of nominals used in preverbal position (hereafter PREV) and in postverbal position (hereafter PSTV) varied from child to child and from age to age.

Fifty seven percent of Mengmeng's nominals used for subsequent mentions were PRED at Age Phase 1. Their uses for subsequent mentions as PRED decreased with age. Until Age Phase 9, only 6% of the nominals used for subsequent mentions consisted of PRED. The proportions of the nominals used for subsequent mentions as PREV and PSTV varied from age to age, oscillating between 15% and 61% as PREV and between 6% and 57% as PSTV. These nominals were sometimes more PREV (at Age Phases 3, 4, 6, 8, and 9) and sometimes more PSTV (at Age Phases 1, 2 and 5).

Dandan's use of nominals for subsequent mentions as PRED also decreased with age: 91%, 63% and 31% of the nominals were of this type at Age Phase 1, 2, and 3, respectively. With respect to whether these nominals were PREV or PSTV, Table 7.3b shows no preference for either position.

Maliang shows the same pattern as Mengmeng and Dandan, nominals used for subsequent mentions as PRED also decreased with age: 66%, 49% and 9% of the nominals were used in this way at Age Phases 2, 3, and 4, respectively. Concerning PREV and PSTV nominals used for subsequent mentions, Table 7.3b reveals a preference for postverbal position, i.e., 28% versus 6% for PSTV versus PREV at Age Phase 2; 36% versus 15% at Age Phase 3; 57% versus 41% at Age Phase 4.

Jiajia's use of nominals for subsequent mentions as PRED corresponded to 12% and 14% at Age Phases 6 and 7, respectively. Considering nominals used for subsequent mentions in PREV and PSTV positions, Table 7.3b shows no preference for either PREV (45% and 41%) or PSTV (43% and 47%) at Age Phases 6 and 7, respectively.

Duanlian's uses of nominals for subsequent mentions as PRED corresponded to 12% and 10% at Age Phases 8 and 9. With respect to nominals used for subsequent mentions in PREV and PSTV positions. Table 7.3b shows that Duanlian used nominals preverbally (49% at Age Phase 8 and 55% at Age Phase 9) slightly more often than

postverbally (39% at Age Phase 8 and 35% at Age Phase 9).

In sum, nominals used to denote referents on subsequent mentions in verbless predicating constructions (PRED) decreased with age for all children as a result of the fact that verbless utterances also decreased with age. With respect to NPs used for subsequent mentions in utterances containing verbs, children sometimes use nominals more preverbally, sometimes more postverbally. In other words, children do not show any clear preference for using nominals for subsequent mentions either preverbally or postverbally.

THIRD PERSON PRONOUNS

As mentioned above, third person pronouns were rarely used by our subjects before Age Phase 4. Therefore, we mainly focussed on the position of pronouns used for subsequent mentions after this age. Secondly, third person pronouns were only occasionally used in verbless predicating constructions (PRED).

In Mengmeng's data (see Table 7.3a), no third person pronouns occurred for subsequent mentions before Age Phase 4. Among the 14 instances of third person pronouns used at Age Phase 4, 86% were used in PREV position, 7% in PSTV position, and 7% as PRED. The 2 instances recorded at Age Phase 5 were used as PREV. No instances were recorded at all at Age Phase 6; out of the 23 instances recorded at Age Phase 8, 83% were used in PREV position, 17% in PSTV position, and none as PRED. Out of the 35 instances at Age Phase 9, 77% were in PREV position, 23% in PSTV position, and none as PRED. Overall, Mengmeng showed a preference to use third pronouns preverbally.

As shown in Table 7.3b, only one pronoun was recorded for subsequent mentions in the corpus of Dandan, and it was used in PREV position. Five were recorded in the corpus of Maliang: three were used in PREV position and two in PSTV position. Among Jijia's 143 instances of third person pronouns recorded at Age Phase 6, 83% were used in PREV position, 15% in PSTV position, and 2% as PRED. Among 49 instances used at Age Phase 7, 84% were used in PREV position, 12% in PSTV position, and 4% as PRED. Jijia also showed a preference for using third person pronouns preverbally. The use of third person pronouns by Duanlian shows that among 7 instances recorded at Age Phase 8, 6 cases were used in PREV position, 1 case in PSTV position, and none as PRED. Among 59 instances recorded at Age Phase 9, 76% were used in PREV position, 22% in PSTV position, and 2% as PRED. Duanlian also showed a preference for using third person pronouns preverbally.

On the average, our young subjects showed a clear preference for the use of third person pronouns in preverbal position.

Table 7.3a Positions of referring expressions used for subsequent mentions in each of Mengmeng's (MM) age phases

Child	Age Phase	Nominals				Third Person Pronouns				Zero forms			
		total (no.)	PREV	PSTV	PRED	total (no.)	PREV	PSTV	PRED	total (no.)	PREV	PSTV	PRED
MM	1	58	19%	24%	57%	0	0	0	0	20	70%	30%	0%
MM	2	27	15%	41%	44%	0	0	0	0	15	60%	40%	0%
MM	3	19	47%	16%	37%	0	0	0	0	22	50%	50%	0%
MM	4	95	48%	26%	25%	14	86%	7%	7%	64	73%	25%	2%
MM	5	21	33%	57%	10%	2	2	0	0	15	33%	67%	0%
MM	6	7	5	1	1	0	0	0	0	4	2	2	0
MM	7	-	-	-	-	-	-	-	-	-	-	-	-
MM	8	82	61%	21%	17%	23	83%	17%	0%	102	68%	32%	0%
MM	9	158	60%	34%	6%	35	77%	23%	0%	138	74%	25%	1%

Table 7.3b Positions of referring expressions used for subsequent mentions in each of Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases

Child	Age Phase	Nominals				Third Person Pronoun				ZERO			
		total (no.)	PREV	PSTV	PRED	total (no.)	PREV	PSTV	PRED	total (no.)	PREV	PSTV	PRED
DD	1	11	9%	0%	91%	0	0	0	0	6	1	5	0
DD	2	56	16%	21%	63%	0	0	0	0	60	55%	35%	10%
DD	3	51	35%	33%	31%	1	1	0	0	40	55%	30%	15%
ML	2	50	6%	28%	66%	2	1	1	0	36	64%	25%	11%
ML	3	47	15%	36%	49%	1	0	1	0	26	89%	12%	0%
ML	4	23	35%	57%	9%	2	2	0	0	10	70%	20%	10%
JJ	6	406	45%	43%	12%	143	83%	15%	2%	282	53%	47%	1%
JJ	7	269	41%	47%	14%	49	84%	12%	4%	141	64%	34%	2%
DL	8	69	49%	39%	12%	7	6	1	0	56	61%	36%	4%
DL	9	256	55%	35%	10%	59	76%	22%	2%	132	71%	27%	2%

ZERO FORMS

Some zero forms were used to denote referents on subsequent mentions with predicating constructions, i.e., in these cases an introduced referent was indicated only by its location or motion without any lexical content, e.g., *nàr* 'there' and *diào le* 'fell'. Such cases were rare, especially for all children after Age Phase 4. Examples will be given and discussed in section 7.4.1.

Mengmeng used zero forms preverbally twice as frequently as postverbally except at Age Phase 5 (33% PREV and 67% PSTV) and at Age Phases 3 and 6 (50% PREV and 50% PSTV at both ages). After Age Phase 1, Dandan used zero forms much more often preverbally (55% at Age Phases 2 and 3) than postverbally (35% and 30% at Age Phases 2 and 3, respectively). Maliang, Jiajia, and Duanlian, used zero forms twice as much preverbally as postverbally. When children produced utterances of about three words (from Age Phase 6 on), preverbal zero forms were about twice as frequent as postverbal ones.

When comparing the results concerning the uses of nominals, third person pronouns, and zero forms for subsequent mentions, the children show a clear preference for using the leaner forms (e.g., pronouns and zero forms) in preverbal position. In contrast, children did not show any preference for using nominals either preverbally or postverbally.

7.3 Forms used in coreferential versus non-coreferential contexts

As discussed in Chapter 4 (4.3.2), referring expressions for maintaining reference are analyzed in terms of two types of contexts: (1) *coreferential contexts* (RCC): NPs used for the subsequent mention of referents whose most recent mention is in the immediately preceding linguistic context (or utterance); (2) *non-coreferential contexts* (RNC): NPs used for the subsequent mention of referents whose most recent mention is not in the immediately preceding linguistic context (or utterance), i.e., there is at least one intervening utterance with the mention of other referents between the current mention and the most recent mention of a given referent. According to the adult system, lean forms (e.g., pronominals and zero forms) should occur in coreferential contexts, while nominals should occur in non-coreferential contexts.

Forms were categorized into two groups, i.e., proforms and nominals. Proforms consist of third person pronouns and zero forms, and nominals include all other referring expressions. Table 7.4 summarizes the results of our subjects' uses of nominals and proforms in coreferential versus non-coreferential contexts.

As Table 7.4 shows, Mengmeng used nominals in coreferential contexts as well as in non-coreferential contexts. The proportions of the nominals in coreferential

contexts varied from age to age, oscillating between 36% and 53%. The proportions of the nominals in non-coreferential contexts also varied between 47% and 64%. Second, 50% of proforms were used in coreferential contexts and 50% in non-coreferential contexts at Age Phase 1. However, from Age Phase 2 on (except at Age Phase 5) the proportions of proforms in coreferential contexts were twice as high as those in non-coreferential contexts. On the average, proforms were used more often in coreferential contexts than in non-coreferential contexts.

Dandan's uses of nominals occurred both in coreferential and in non-coreferential contexts. The proportions of nominals in coreferential contexts versus in non-coreferential contexts varied: 45% were used in coreferential contexts and 55% in non-coreferential contexts at Age Phase 1; 41% were used in coreferential contexts and 59% in non-coreferential contexts at Age Phase 2; 66% were used in coreferential contexts and 34% in non-coreferential contexts at Age Phase 3. Second, proforms were more frequent in coreferential contexts (62% at Age Phase 2 and 83% at Age Phase 3) than in non-coreferential contexts (38% at Age Phase 2 and 17% at Age Phase 3), except at Age Phase 1 where among the six proforms two cases were used in coreferential contexts and four cases in non-coreferential contexts.

In Maliang's data, the proportions of nominals in coreferential contexts increased with age: 28%, 34%, and 52% of nominals were in coreferential contexts at Age Phases 2, 3, and 4, respectively; while the proportions of nominals in non-coreferential contexts decreased with age: 72%, 66%, and 48% of nominals were in non-coreferential contexts at Age Phases 2, 3, and 4, respectively. Proforms were used mostly in coreferential contexts and rarely in non-coreferential contexts.

Jiajia used slightly more nominals in coreferential contexts (54% at both Age Phases 6 and 7) than in non-coreferential contexts. As did Mengmeng, Dandan, and Maliang, Jiajia also preferred to use proforms in coreferential contexts (74% and 84% at Age Phases 6 and 7, respectively), rather than in non-coreferential contexts.

In Duanlian's data, the proportions of nominals in coreferential versus non-coreferential contexts varied slightly: 58% of nominals were used in coreferential contexts at Age Phase 8 and 42% at Age Phase 9. With respect to proforms, they were much more frequent in coreferential contexts (78% and 83% at Age Phases 8 and 9, respectively) than in non-coreferential contexts.

In sum, nominals were used by our subjects both in coreferential and non-coreferential contexts, without any preference, while proforms were strongly preferred in coreferential contexts.

Table 7.4 Referring expressions in coreferential and non-coreferential contexts in each of Mengmeng's (MM), Dandan's (DD), Maliang's (ML), Jiajia's (JJ), and Duanlian's (DL) age phases

Child	Age Phase	Nominals			Proforms		
		total (no.)	RCC	RNC	total (no.)	RCC	RNC
MM	1	58	45%	55%	20	50%	50%
MM	2	27	48%	52%	15	73%	27%
MM	3	19	53%	47%	22	73%	27%
MM	4	95	53%	47%	78	63%	37%
MM	5	21	43%	57%	17	41%	59%
MM	6	7	2	5	4	2	2
MM	7	-	-	-	-	-	-
MM	8	82	46%	54%	125	60%	40%
MM	9	158	36%	64%	163	70%	30%
DD	1	11	45%	55%	6	2	4
DD	2	56	41%	59%	60	62%	38%
DD	3	51	66%	34%	41	83%	17%
ML	2	50	28%	72%	38	100%	0%
ML	3	47	34%	66%	27	100%	0%
ML	4	23	52%	48%	12	92%	8%
JJ	6	406	54%	46%	425	74%	26%
JJ	7	269	54%	46%	190	84%	16%
DL	8	69	58%	42%	63	78%	22%
DL	9	256	42%	58%	191	83%	17%

7.4 The nature of children's noun phrases for reference maintenance: Are they used anaphorically?

Studies of the conversational competence of young English-speaking children report that children's speech is *coherent* or relevant, i.e., the information expressed in the utterance

relates to what precedes and follows it, so that the discourse is 'about something' (cf. Atkinson, 1979; Bloom, 1976; Ochs, Schieffelin, & Platt, 1979). In this study, it is also found that young Chinese children's speech is coherent. However, their uses of cohesive devices, and more particularly their uses of referring expressions in discourse, changed with age.

7.4.1 Cohesive devices at early stages

As shown in sections 7.1 and 7.2 above, NPs used for the subsequent mentions of referents consisted of bare nominals and of zero forms. Bare nominals were used often in verbless utterances labelling referents, i.e., utterances that can be interpreted as implicit predicating constructions. Examples (1), (2), (3), and (4) are typical uses in the conversation between adults and children at early stages (i.e., before Age Phase 2) and they illustrate how young children use NPs for referents on subsequent mention.

In (1) Mengmeng's grandmother initiated a conversation about a tractor which is passing by with *shénme jī xiǎng le?* 'Which machine made this sound?' Mengmeng did not answer, possibly because she did not know the word tractor. Her grandmother replied with *tuōlājī* 'The tractor'. Mengmeng repeated *tuōlājī* 'The tractor'. Then her grandmother expanded the sentence to *tuōlājī xiǎng le* 'It's the tractor that made this sound'.

(1) Age of MM: 1;7.9

[A tractor passes by. GMO and MM hear the noise it makes.]

GMO: *Shénme jī₁ xiǎng le?*
 which machine make-sound LE?
Which machine₁ made this sound?

GMO: *Tuōlājī₁.*
 tractor
 The tractor.

CHI: *Tuōlājī₁.*
 tractor
 The tractor.

GMO: *Tuōlājī₁ xiǎng le.*
 tractor loud le
It's the tractor₁ that made this sound.

¹ Noun phrases which have the same subscript letter are used to refer to the same referent.

In (2) the conversation was initiated by Dandan, with an implicit predicating construction (*wáwa* 'doll'). EXP did not understand what she was talking about and questioned with *a?* 'Uhm?'. Dandan repeated *a-* 'wáwa 'Um, doll'. In turn, EXP said *wáwa a-?* 'doll -?' and showed that she was not sure about it. Dandan answered *en* 'yes'. Referring to a particular doll in the situation, EXP then asked *wáwa ne?* 'where is the doll?'. Dandan answered *wáwa zǒu a* 'the doll walked away'. EXP had not seen the doll and had not played with it that day. She showed that she did not understand with *a-?* 'uhm?'. Dandan answered with *zài wūwu ne* '(it) is in the bed room', in which a zero form denoted the doll.

(2) Age of DD: 1;7.25

CHI: *Wáwa,*

doll.

A/The doll.

EXP: A?

Q

Uhm?

CHI: A@i- 'wáwa,

um A/The doll,

Um, A/The doll.

EXP: *Wáwa, a?*

doll Q

A doll,?

CHI: En.

yes

Yes.

EXP: *Wáwa, ne?*

doll Q

Where is *the doll*,?

CHI: *Wáwa, zǒu a.*

doll walk PATL

The doll, walked away/isn't here.

EXP: A -?

Q

Uhm?

CHI: Ø, zài wūwu@c ne.
 Ø be/at bed-room PATL
*It*₁ is in the bed room.

EXP: Ø₁ zài wūwu@c a?
 Ø be/at bed-room a?
*It*₁ is in the bed room?

CHI: En-.
 yes
 Yes.

In (3) Dandan wanted to have some cotton and said to her mother *máomao@c* 'cotton'. Her mother ignored her and Dandan said *máomao@c* 'cotton' again. EXP came near by and asked her *wǒ kànkàn # zhè máomao@c gàn shénme yòng?* 'let me see what this cotton is used for'. Dandan answered *bèibei* 'quilt'. She asked for the cotton again with an utterance initiated with an interjection, *en:-@i ná* 'uhm, take', in which the cotton, not the quilt, was denoted with a zero form.

(3) Age of DD: 1;8.10

[DD's mother is making a quilt with cotton. DD is playing around, then she goes to her mother.]

CHI: *Máomao@c*,
 cotton
Cotton,

CHI: # *Máomao@c*,
 # cotton
Cotton,

EXP: Wǒ kànkàn # zhè máomao@c₁ gàn shénme yòng.
 1p have-a-look # this cotton do what use
 Let me see what *this cotton*₁ is used for.

CHI: *Bèibei*,
 quilt
 (for) a/the *quilt*,

EXP: *Bèibei*, a -?
 quilt Q
 (for) a/the *quilt*, ?

\emptyset , zuò *bèibei*₁ de shì ma?
 \emptyset do quilt DE be Q
 Is *it*, for making (a/the) *quilt*?

CHI: En:-@i <ná> [I] ná \emptyset .
 uhm, take take \emptyset
 Uhm, (I want to) take (*the cotton*)₁.

In (4) below, ADU and Maliang played with a little toy cat. Maliang referred to the cat subsequently both with zero forms and with bare nouns (in a predicating construction).

(4) Age of ML: 1;8.13

[ADU has a little toy cat in her's hands.]

ADU: Shéi shǒu-li ná-zhe xiǎo māomao?
 who hand-in hold-ZHE little cat
 Who is holding *a/the little cat*, in her hands?

CHI: Maliang bàobao \emptyset .
 Maliang carry \emptyset
 Maliang carries *it*.
 [= ML want to have the little cat.]

Māma [!!].

mother.

Mummy!

[= He wants the cat. His mother isn't at home. He asks for help.]

ADU: Hǎo, Maliang bàobao \emptyset .
 ok Maliang carry \emptyset
 Ok, Maliang carries *it*.

CHI: Ai@i xiǎo māomao.
 um little cat
 Um, *a little cat*.

CHI: Zhè # xiǎo māomao.
 this # little cat
 This is *a little cat*.

Example (1) showed one type of cohesive devices, i.e., the repetition of all or part of the preceding adult utterance. Examples (2) and (3) showed conversations which were initiated by the child. Dandan initiated conversations about a doll (see (2)) and about cotton (see (3)) with bare nominals in implicit predicating constructions labelling the

referents. Then, she either repeated the topic entities introduced or she referred to them with zero forms and added new information about them. Example (4) shows an example of Maliang's uses of cohesive devices. As did Dandan, he either referred subsequently to the topic entity with zero forms or labelled them. The above four examples also illustrated that children referred to objects in focus (topics) with zero forms.

In short, cohesive devices produced by children at the early stages consisted mainly of repeated nominals or of zero forms denoting the topic.

7.4.2 Cohesive devices at later stages

The quantitative analyses of NPs used by the children for subsequent mentions in terms of forms, of position, and of coreference have shown that these uses gradually evolved approximate adult uses. However, these analyses do not necessarily indicate that these uses are anaphoric.

As shown in Chapter 6, children before Age Phase 9 mainly introduced referents deictically. Our subjects also used deictic pronouns for referents not only on first mentions but also on subsequent mentions (see 7.1). Since young children mainly talk about things in the here-and-now, the identity of referents on subsequent mention can be based on information from linguistic and non-linguistic contexts. In order to determine whether or not the NPs used for subsequent mentions are anaphoric, we need to examine especially pronouns and zero forms with respect to whether or not information from the non-linguistic context is necessary to identify them.

In the following examples of NPs used for subsequent mentions (above Age Phase 4) we pay particular attention to the uses of third person pronouns and zero forms. For example, in (5) shown below, Mengmeng and ADU were reading a picture book. ADU elicited a story with a predicating construction *zhè shì xiǎo yā ma?* 'Are these little ducks?'. Mengmeng answered *shì de* 'yes' and continued the story with *tā dài-zhe xiǎo yā* 'it walks with little ducks', where the third person pronoun *ta* '3p' was not used to refer to the three ducks mentioned by ADU in the previous linguistic context, but rather to the mother duck on the picture. Then, Mengmeng and ADU continued to describe the following pictures, which were about the mother duck wearing a medal. The utterance 8/ of Mengmeng was *tā, guà jīnpái* 'it wears a medal'. In the previous linguistic context, it was mentioned that the mother duck wore a medal. So *tā* '3p' could be identified as denoting the mother duck on the basis of linguistic information, as well as on the basis of immediately non-linguistic information from the picture. Mengmeng's utterance 9/ was *tā, méi guà* 'it doesn't wear any'. *Tā* '3p' in 9/ could not be identified on the basis of previous linguistic context because it was not used to refer to the mother duck in the preceding utterance. However, it was possible to identify the intended referent on the basis of non-linguistic information from the picture: *ta* '3p' was used

to refer to another duck which did not wear a medal and stood next to the mother duck in the picture. Thus, we suggest that Mengmeng's use of pronouns such as *tā*, '3p' in the utterance 2/ and *tā*, '3p' 8/ as well as *tā_n*, '3p' in 9/ were not anaphoric.

(5) Age of MM: 2;3.6

[MM and ADU look at a picture book. There are three little ducks with a mother duck on the picture that ADU and CHI are looking at.]

ADU: Zhè₁ shì xiǎo yā ma?
 this be little duck Q
 Are *these*, little ducks?

1/ CHI: Shì de.
 be DE
 Yes.

2/ Tā₁ dài-zhe xiǎo yā.
 3p bring-ZHE little duck
 It₁ [= the mother duck] is with little ducks.

3/ Zhè_m yě shì yī-ge xiǎo yā.
 this also be one-CL little duck
 This_m is also a little duck.
 [= There are several other ducks, small ones and big ones.]

[Turn to next page: Several other ducks are on the picture.]

ADU: Tā-men_o yǒu xiǎo yā ma?
 3p-men exist little duck Q
 Do *they*_o [= the other big ducks] have baby ducks?

4/ CHI: Māma, yǒu.
 mother exist
 Mother₁ has.

ADU: Nǐi-ge shì tā māma?
 which-CL be 3p mother
 Which one is its/their mother?

5/ CHI: Zhè₁ shì tā māma.
 this be 3p mother
 This₁ is its/their mother.

6/ *Tā* *māmā*_j *guà-le* *jīnpái*_m.
 3p mother wear-LE medal
His mother_j wears a medal_m.

ADU: *Jīnpái*_m *ya?*
 medal Q
A medal_m?

[EXP comes and looks at the picture book with them.]

EXP: *Něi-ge* *shì* *tā* *māma?*
 which-CL be 3p mother
Which is its mother.

7/ CHI: *Zhè-ge*_j.
 this-CL
This one_j.

8/ *Tā*_j *guà* *jīnpái*.
 3p wear medal
It_j wears a medal.

9/ *Tā*_n *méi* *guà*.
 3p not wear.
It_n doesn't wear any.

Example (6) illustrates how Duanlian maintains reference to entities in discourse. In the situation shown in (6) Duanlian, MOT, and EXP were watching TV. The film showed people visiting a company. They got into a bus and then waved their hand to say goodbye. EXP asked Duanlian what these people were doing.

(6) Age of DL: 3;3.0:

[DL, MOT and EXP are watching TV.]

EXP: *Tā-men*₁ *dōu* *gàn* *shénme* *ya?*
 3p-PLU all do what Q
What are they₁ doing?

*Tā-men*₁ *dōu* *gàn* *shénme* *ya?*
 3p-PLU all do what Q
What are they₁ doing?

Tā-men, gàn shénme le?
 3p-PLU do what LE
 What are *they*₁ doing?

1/ CHI: An@i wǒ gàosu nǐ.
 uhm 1p tell you.
 Uhm, I tell you.

EXP: Nǐ gàosu wǒ ba.
 2p tell 1p PATL
 You tell me.

Shénme ya?
 what Q
 What?

2/ CHI: Ø₁ zuò gōnggòng qìchē.
 Ø sit public bus
*They*₁ take the public bus.

EXP: Ø₁ zuò gōnggòng qìchē a -.
 Ø sit public bus PATL
*They*₁ take the public bus.

Ø₁ dào nǎr qù a?
 Ø to where go Q
 Where do *they*₁ go to ?

3/ CHI: Ø₁ dào hǎoyuǎnhǎoyuǎn de dìfang qù.
 Ø to far-away DE place go
*They*₁ go far away.

MOT: Ao@i Ø₁ shàng hǎoyuǎnhǎoyuǎn de dìfang qù.
 Uhm Ø to far-away DE place go
 Um, *they*₁ go far away.

EXP: Shìbù Ø₁ shàng dòngwùyuán qù a?
 whether Ø to zoo go Q
 Do *they*₁ go to the zoo or not?

Ø₁ shì shàng dòngwùyuán qù ma?
 Ø be to zoo go Q
 Do *they*₁ go to the zoo?

- 4/ CHI: *Tā-men*, [/] *Tā-men*, gēn wǒ zàijiàn ne.
 3p-plu 3p-plu with 1p bye PATL
They, ... *They*, say goodbye to me.
 [= DL does not listen to EXP and MOT and does not answer EXP's question. Rather, DL is watching the TV and does not answer the question. The people on the TV are waving their hands.]

Duanlian replied *zuò gōnggòng qìchē* 'take the public bus' (see 2/ in (6)), where a zero form was used to refer to the people getting into the bus, which was also mentioned in the immediately preceding utterance by EXP. The following conversation was about these people sitting in the bus, and zero forms were always used to denote them. The utterance 5/ of Duanlian did not respond to EXP's question but was describing the new scene on the screen, where the people 'said' goodbye by waving their hands. However, *Tā-men*, '3p-PLU' was coreferential with other NPs (i.e., denoting the people getting into the bus) mentioned in the previous utterance (with zero forms) and it was used to refer to the people on the screen deictically. Other than that, the adults and Duanlian used zero forms for the referent in focus (the topic referents).

Similar uses were also observed in Jiajia's data. As shown in (7), extracted from Story One *A Bear and Two Children* in Appendix I, the listener failed to identify the intended referents encoded by the zero form in 21/ and by the pronoun *tā* '3p' in 40/ in (7), selecting a non-intended referent (i.e., the bear for both \emptyset in 21/ and *ta* '3p' in 40/) rather than Jinhua and her mother, respectively. In both cases, Jiajia used zero forms and pronouns to refer to the referents on the pictures the child and the adult were looking at.

(7) Age of JJ: 2;8.17

[...]

- 19/ CHI: *Háizi-men* xià le yī-tiào le.
 kid-PLU afraid LE one-jump LE
 The children were really frightened.

ADU: En # xióng yī-jiào
 Aham # bear one-shout
 Aham, the bear shouted

Háizi-men xià yī-tiào le # shì ma?
 kid-PLU afraid one-jump LE # be Q
 so that the children were frightened.

- 20/ CHI: En.
yes
Yes.
- ADU: Zhèr ne?
here Q
and here?
- 21/ CHI: Ø guò-qù ná kuāng le.
ø over-go take basket LE
She went over to fetch a/the basket.
[= on the picture the girl Jīnhuā goes to fetch a/the basket]
- [...]
- ADU: Hòulái tā zěnmeyàng le?
later 3p how LE
What has happened then?
- 37/ CHI: Tā gěi dìdi dǐnghuǒ (?).
3p give brother ??
He gave the boy ??.
- ADU: Tā gěi dìdi zěnmē le?
3p give brother what LE
What did he give the boy?
- 38/ CHI: Tā ná zhè qǐlái gěi dìdi dǐnghuǒ (?).
3p take this up give brother ??
He took this for the brother to ??.
- 39/ Tā ná zhè qǐlái +/.
3p take this up
He took this up ...
- ADU: Tā bǎ dìdi-de mén suǒ-shàng le, shì ma?
3p BA brother's door lock-on LE, be Q
He locked the brother's door, was it that?
- 40/ CHI: Tā nèi-ge jiù huí lái le.
3p that-CL just return LE
She, then, came home.
[= on the picture their mother returns home].

As discussed above, proforms are typically used by adults in coreferential contexts. As has been shown in 7.3, proforms were also used by our subjects in non-coreferential contexts, although most of them were used in coreferential contexts. In order to identify

proforms in coreferential contexts, it is possible to make use of information from both previous linguistic context and non-linguistic context if the referents denoted are present. However, in identifying proforms in non-coreferential contexts, the preceding linguistic context and the non-linguistic context can provide contradictory information. Nonetheless, ambiguous reference was in fact strikingly rare, even in cases of zero forms used in non-coreferential contexts. Therefore, it is necessary to ask: are the proforms used for referents on subsequent mention deictic?

Several sessions of the children were examined with particular attention to pronouns and zero forms used in non-coreferential contexts. As illustrated in the examples above, most pronouns and zero forms in non-coreferential contexts were used for referents in focus (the topics).

In short, children preferred to use zero forms for referents in coreferential contexts rather than in non-coreferential contexts. To identify referents in non-coreferential contexts, the listener has to rely on information from non-linguistic context or a device to identify it with the topic (hereafter *topic referent strategy*). These uses, at least, do not rely maximally on linguistic context. Therefore, they might be deictic at least partially, rather than maximally anaphoric.

7.5 Conclusion

This quantitative analysis of referring expressions used for referents on subsequent mentions has focussed on their forms, their positions in relation to the verb, and coreferential versus non-coreferential contexts. Children at early stages mainly maintain reference to entities in discourse with bare nominals or zero forms. Their contributions to the coherence of conversation are of three types: 1) repeating all or part of adult's speech; 2) predicating/labelling the intended referent; 3) referring to the intended referent, often to the topic referent, with zero forms and adding new relevant information about it. Their uses of NPs for referents on subsequent mention are mostly deictic.

Children's referring expressions for subsequent mentions beyond the early stages are not yet anaphoric. However, the quantitative analyses have shown that their uses of referring expressions, especially from Age Phase 8 on, are much closer to adult uses in terms of NP forms, their positions in the utterance, and their distribution in coreferential versus non-coreferential contexts. Analyses of the conversation produced by our subjects showed that children's uses of pronouns and zero forms are deictic, i.e., they are used to denote referents in the non-linguistic context, regardless of whether they were mentioned in the preceding linguistic context. In addition, zero forms used for referents in non-coreferential contexts were often the topic of conversation. Pronominalization of topic referents may be an intermediate step in developing adult-like anaphoric devices for reference maintenance to entities introduced in previous discourse. A further

systematic study (also of children beyond the age of three-and-a-half years) of the effect of the topicality is necessary to examine the development of anaphora.

As discussed above, children's utterances were linked to each other from the point of view of content, and they were greatly relevant to the immediately situational context. Although zero forms were one type of cohesive device used by children and although these devices are typically (but not always) anaphoric in the adult language, they were also used for referents on first mention (see Chapter 6). Zero forms are not used anaphorically by young children, but rather deictically to denote referents present in the non-linguistic context, regardless of information status in linguistic context.

8 Summary and Conclusions

The aim of this study was to provide information enabling us to better understand and account for the development of reference on the basis of young Chinese children's uses of referring expressions. Chinese children's ability to use referring expressions for nonspecific versus specific reference, and for given versus new information was analyzed in terms of the following NP properties: NP forms, NP position in relation to the verb in verb clauses, first versus subsequent mentions of referents, and coreferential versus non-coreferential contexts. These analyses are based on longitudinal data for five monolingual Mandarin-speaking children from Beijing between the ages of 0;6 and 3;5 (see 4.2). This discussion brings together the results from Chapters 5, 6, and 7. Three questions have been explored: 1) whether or not young Chinese children are sensitive to the distinctions between specific versus nonspecific reference and between given versus new information, and how these distinctions are encoded with linguistic means; 2) whether or not they code these distinctions in the same way as adults do; 3) whether or not the process of acquisition by children acquiring Chinese is similar to the one observed with children acquiring other languages.

With respect to children's marking of specific versus nonspecific reference, referring expressions used for specific reference, nonspecific reference, and other-reference (i.e., NPs in predicating constructions; also see the definition in 5.2) were analyzed in terms of forms. Although children's uses are sometimes ambiguous, in most situations they differentiate specific from nonspecific reference linguistically: definite referring expressions (i.e., demonstrative nominals, pronouns) are reserved for specific reference, while other referring expressions (bare nominals, nominals with numeral determiners and/or classifiers, nominalizations, and kinship terms with neither possessives nor determiners) are used for both specific and nonspecific reference. The results obtained from our data collected in natural settings show that Mandarin-speaking children have some primitive knowledge of the distinction between specific and nonspecific reference and mark this distinction to some extent with appropriate linguistic devices at the age of three-and-a-half years. As discussed in Chapter 3, differences in task complexity and criteria may explain the controversy in the literature concerning the timing of children's ability to mark specific versus nonspecific reference. These studies

suggest that children have the initial ability to differentiate between specific and nonspecific reference at the age of around three or four (Brown, 1973; Maratsos, 1976; also cf. Chapter 3). Our results support these findings to some extent. In addition, we found that, among the NPs that were used for nonspecific reference, nominals with numeral determiners and/or classifiers were initially used in a particular situation, namely nonspecific-potential reference, i.e., contexts where there is a strong expectation that some specific referent (or some group of specific referents) will be selected as a result of the utterance. In these contexts the uses of nominals with numeral determiners and/or classifiers were appropriate.

However, it must be recalled that nonspecific uses were much less frequent than specific ones and that very few nonspecific uses other than nonspecific-potential ones were attested. Furthermore, also recall that only the most obviously definite forms were differentiated from other uses when reference was specific and that these definite forms were frequently used deictically. Thus, although children do differentiate specific from nonspecific reference, this differentiation is at first restricted to particular NPs and to particular contexts which optimize the emergence of this distinction. These contexts were intermediary between specific and nonspecific uses where a potential specific referent is expected even though reference is nonspecific. The privileged nature of such contexts stems from basically two factors, both of which are related to the nature of the child's activity: in some cases a potential specific referent is about to be created by the child or by his addressee, in others its existence is strongly determined by the child's speech act, typically requests and expressions of desires.

With respect to children's introductions of referents (Chapter 6), referring expressions used for first mentions were investigated in terms of their position in relation to verbs, as well as in terms of their uses for given versus new information. The development of referent introductions by our subjects mainly consists of three phases. First, children before the age of one-and-a-half years mainly used bare nominals combined with deictic gestures to establish joint reference. They were sensitive to some degree to whether or not the listener had attended to the intended referent before further talking about it. Second, children between the age of one-and-a-half years and three years introduce referents continuously with deictic means, but, in most of the cases, verbal deixis replaces the function of deictic gesture. Third, children shortly before three years begin to use nominals with numeral determiners and classifiers and/or postverbal position to introduce new referents. However, nominals with numeral determiners and classifiers for new referents are not used productively, being restricted to narrative contexts.

The uses of existential presentative constructions for referent introductions are found at the *beginning* of narratives. This corresponds to one use of this construction in the target language. Therefore, although these uses show that children are beginning to

analyze referring expressions for new information, they have not yet done a full analysis of the adult system from a functional point of view.

Moreover, children do not make pragmatic uses of word order to mark information status when first mentioning referents before the age of three-and-a-half years. Instead, word order mainly corresponds to the semantic roles of the NPs, such as their role as *agent* and *patient*. Our results suggest that children do not acquire the linguistic devices for referent introductions before the age of three-and-a-half years. These results are consistent with previous experimental studies on Mandarin-speaking children's (beyond the age of four years) referent introductions in narratives carried out by Hickmann and her collaborators (Hickmann & Liang, 1990; Hickmann, Hendriks, & Liang, 1989). Their results suggest that the mastery of appropriate linguistic devices for the introduction of referents is a relatively late development, emerging at about six to seven years. It is preceded by an earlier phase during which children use linguistic devices deictically. Their results showed that the youngest children (four- to five-year-olds) introduced 45% of referents with nominals with numeral determiners and classifiers in narratives. However, there is a quantitative difference in the amount of nominals with numeral determiners and classifiers used by our children and their children for referent introductions. In natural settings, our eldest subjects (i.e., at the age of about three-and-a-half years) introduced less than 16% of referents with NPs containing numeral determiners and classifiers. The difference may be explained not only by the age difference, but also by the difference of discourse types of these two studies. As has been found in our study, most of these uses are related to narrative discourse. Menig-Peterson (1975) also argues that three and four-year-olds specify referents more explicitly when telling a story to a listener unfamiliar with the events being recounted than to a listener familiar with the story events, and that they primarily differentiate givenness from newness in narrative discourse. It seems that children *first* learn some (but not all) of the properties of explicit linguistic devices for referent introductions in special contexts, e.g., explicit linguistic devices are first acquired in narratives. Narrative discourse is a salient situation for children to acquire the uses of explicit linguistic devices for referent introductions, and more generally it is a discourse type that privileges linguistic cohesion.

A comparison of the results of our longitudinal study to those of Brown's (1973) shows a difference with respect to the uses of determiners by English and Chinese-speaking children in obligatory contexts: English-speaking children at the age of three years used determiners correctly more than 90% of the time in obligatory contexts, while Chinese children's correct uses of determiners in obligatory contexts are less than 60%. These differences may be due to the frequency differences of determiners in these two languages. With very few exceptions, determiners are obligatory for singular nouns in English, regardless of information status. However, determiners are not obligatory for

nouns in Chinese, no matter whether they are singular or plural, except when NPs are used to denote new referents. As a result, determiners occur much more frequently overall in English than in Chinese. In addition, since young children's speech, as well as their interlocutor's speech, is tied to the here-and-now, reference is often shared between the speaker and the listener and therefore does not require the use of determiners. As a result, the uses of determiners by adults are much less frequent in our corpora than in Brown's. This distribution might affect the acquisition timing of these uses in these two languages, i.e., language-specific properties also have an impact on the acquisition of linguistic devices for encoding reference.

With respect to children's learning to maintain reference (Chapter 7), attention has been placed on referring expressions used for subsequent mentions in terms of forms, NP positions in relation to the verb, and coreferential versus non-coreferential contexts. Young children's contributions to the coherence of conversations at early stages (i.e., before the age of two years) are mainly of three types: 1) repeating all or part of adult's speech; 2) naming the intended referent; 3) referring to the intended referent with zero forms and then adding new relevant information about it. As for the coherence of children's speech, children's utterances are linked to each other from the point of view of content, and a great deal of their speech is tied to the here-and-now. A contrast between the uses of nominals and pronominals is observed in the children's production in later stages: nominals are used in coreferential contexts as well as in non-coreferential contexts and in preverbal position as well as in postverbal position; pronominals and zero forms are preferred in coreferential contexts and in preverbal position (see 7.2 and 7.3). However, children maintain reference to the entities in discourse with either nominals or pronominals *deictically*.

In addition, pronominalization is not initially based on the preceding linguistic context, but rather on the notion of *topicality* (see 7.3.2), i.e., topic referents have a great probability of being pronominalized. As noted in 7.3.2, this study has not focussed on the relation between the development of cohesive devices and the topicality of referents, so that further research is necessary to provide more detailed information concerning this point. However, these observations are quite similar to the early findings from the studies concerning other languages (Bamberg, 1986; Karmiloff-Smith, 1979). For example, Karmiloff-Smith claims that young children's discourse clearly relies on information from non-linguistic context. Before acquiring the anaphoric uses of pronoun, children's pronominalization in discourse is based on the "thematic subject strategy". Although the "thematic subject strategy" is not completely the same as "topic referent strategy" in this study, there is a great overlap between them. That is, the NPs denoting the relevant referents often occur in the initial position in the sentence and the referents are in focus. In general, children acquiring different languages seem to go through quite similar steps in developing adult-like anaphoric devices for reference maintenance to

entities introduced in previous discourse. First, they maintain reference with deictic means. They then go through a similar intermediate step, i.e., pronominalization of *topic* and/or of *thematic subject*. Finally, they use pronouns by relying maximally on linguistic context, namely, anaphoric pronouns. Within these stages children use similar strategies, as well language-specific strategies.

Taken together, the findings from the three chapters summarized above lead to four conclusions. First, children acquire some aspects of **the semantic distinction** between specific and nonspecific reference **earlier** (before the age of three-and-a-half years) than **the pragmatic distinction** between given and new information. Second, children's referring expressions for specific referents are initially deictic rather than anaphoric, regardless of whether the NPs constitute first versus second mentions of referents and regardless of the status of the information as given versus new. Third, children sometimes do not acquire all the properties of linguistic forms, e.g., nominals with numeral determiners and classifiers. Rather, they first restrict the uses of some forms to special contexts, i.e., narratives when reference is specific and nonspecific potential contexts when reference is nonspecific. Fourth, this study both supports and provides evidence against previous findings (cf. Brown, 1973; Hickmann, 1989, 1991a, in press; Hickmann, Hendriks, & Liang, 1989; Hickmann & Liang, 1990; Maratsos, 1976; Karmiloff-Smith; 1979), with respect to the acquisition process.

As for the first point, the complexity of the two distinctions (i.e., specific versus nonspecific reference and given versus new information) may explain the delay in the acquisition of the pragmatic distinction. The semantic distinction (specific versus nonspecific reference) is based on the intention on the part of the speaker. However, the pragmatic distinction (given versus new information) is based not only on the intention of the speaker, but also on the speaker's assumption about his listener knowledge of the intended referent. In other words, the pragmatic distinction between givenness and newness is more complex than the semantic distinction between specific and nonspecific reference. In addition, as mentioned above, only special nonspecific uses are attested early and such cases are not very frequent, so that the distinction between specific and nonspecific reference further develops after the initial phases of development studied in this thesis.

The second point is that children's referring expressions including pronominals are initially deictic. Acquisition data from different studies show that, before acquiring adult devices, children frequently label referents with predicating constructions to introduce them in discourse, often accompanied by gestures or by NPs indicating locations (Atkinson, 1979; Garton, 1984, Keenan & Schieffelin, 1976). Although predicating constructions labelling referents can be used to introduce referents they are appropriate for situations characterized by mutual knowledge, whereas other means are more appropriate in the absence of mutual knowledge. Since children's utterances are

tied to the here-and-now, predicating constructions may be the only available means for children before mastering adult devices to denote intended referents. Thus, the deictic uses of referring expressions may be more basic than other uses and anaphoric uses may develop on the basis of these deictic uses (cf. Hickmann, 1982; Klein, 1990). However, further research is necessary to support this conclusion, since most of the data available in this study involved mutual knowledge situations inherent in naturalistic conversations.

The third point is that children first learn some properties of linguistic forms and learn them in special contexts. For example, the first uses of nominals with numeral determiners and/or classifiers for nonspecific reference are first related to nonspecific potential reference contexts, where reference has a great probability to be instantiated. In addition, the first uses of nominals with numeral determiners and classifiers for specific referents also occur in relation to a particular discourse type, namely referent introductions in narratives. A number of other studies in different areas of child language indeed show that children's first uses of linguistic forms are sometimes associated with prototypical situations, often most salient to children at early stage of cognitive development (also see Slobin, 1985). In other words, children sometimes first learn some (e.g., prototypical) properties of particular linguistic forms. They then master all properties of these forms with growing linguistic and cognitive development.

Fourth, similarities and differences were found in the acquisition of linguistic devices for reference maintenance by children acquiring different languages. In comparing the results of this study to previous studies (see 7.4.2), we found three similar steps in the process of acquiring anaphoric pronouns, as well as variations in the intermediate step of this process. In particular, English-speaking children use the "thematic subject strategy", while Mandarin-speaking children use the "topic referent strategy". Both of these strategies pattern with the native language: English is characterized as a subject-oriented language, while Chinese is topic-oriented (see Li & Thompson, 1975; Tsao, 1977). This study has not focussed on the relation between the development of anaphoric pronouns and the notion of topicality in Chinese. A detailed study of this language-specific relation in Chinese and in comparison to other languages, would be also worthwhile.

In conclusion, this study provides information about young Chinese children's (i.e., between the age of one year and three-and-a-half years) acquisition of referring expressions. This information helps us understand the development of reference in general: in contrast to Bickerton's Language Bioprogramm Hypothesis (Bickerton, 1984, see 3.5), the findings of this study suggests that language acquisition cannot be explained independently from general cognitive capacity, from non-linguistic and linguistic contextual factors, or from language-specific factors.

Further studies are necessary to analyze adults' speech in the same corpora in order to find out whether the differences in the frequencies of the types of NPs used by

the five children and in the timing of the first occurrences of certain types of NPs are related to the particular input received by the children. In addition, this study has focussed on the development of referring expressions by Chinese children under the age of three-and-a-half years. The results show that children before the age of three-and-a-half years have not yet fully acquired linguistic devices for referent introductions and reference maintenance. A future study on the continuing development of children's uses of referring expressions after three-and-a-half years is necessary in order to provide a more complete understanding of children's overall developing ability to denote referents.

References

- Atkinson, M. 1979. Prerequisites for reference. In E. Ochs and B.S. Schieffelin, (eds.) *Developmental Pragmatics*, 229-250. New York: Academic Press.
- Ariel, M. 1990. *Accessing Noun-Phrase Antecedents*. London: Routledge.
- Bamberg, M. 1986. A functional approach to the acquisition of anaphoric relationships. *Linguistics*, 24 (1), 227-284.
- Bates, E., Benigni, L., Bretherton, I., Camaioni, L., & Volterra, V., 1976. From gesture to the first word: On cognitive and social prerequisites. In M. Lewis & L. Rosenblum (eds.), *Origins of Behavior: Communication and Language*. New York: John Wiley.
- Bates, E., Camaioni, L., & Volterra, V. 1975. The acquisition of performatives prior to speech. *Merrill-Palmer Quarterly*, 21, 205-26.
- Bates, E. & MacWhinney, B. 1978. The Functionalist approach to the acquisition of grammar. In E. Keenan (ed.), *Developmental Pragmatics*. New York: Academic Press.
- Behrens, H. 1993. Temporal reference in German child language: Form and function of early verb use. Unpublished doctoral dissertation, Free University of Amsterdam.
- Berman, R.A. & Slobin, D.I. 1993. *Different Ways of Relating Events in Narrative: A Crosslinguistic Study of Children's Narratives*. Hillsdale, N.J.: Erlbaum.
- Bickerton, D. 1981. *Roots of Language*. Ann Arbor: Karoma.
- Bickerton, D. 1984. The language bioprogram hypothesis. *Behavioral and Brain Sciences*, 7, 173-188.
- Bloom, L. 1976. Child language and the origins of language. In S. Harnad, H. Steklis, & J. Lancaster (eds.), *Origins and evolution of Language and Speech*. New York: New York Academy of Sciences.
- Bowerman, M. 1973. *Early Syntactic Development: A Cross-Linguistic Study with Special Reference to Finnish*. Cambridge: Cambridge University Press.
- Bowerman, M. 1989. Learning a semantic system: What role do cognitive prerequisites play? In M. Rice & R. Schiefelsbush (eds.), *The Teachability of Language*. Hillsdale, NJ: Erlbaum.
- Brown, R. 1973. *A First Language*. Cambridge, Mass.: Harvard University Press.
- Bruner, J.S. 1978. Learning how to do things with words. In J.S. Bruner & A. Garton (eds.), *Human Growth and Development*. Oxford: Clarendon Press.
- Bruner, J.S. 1978. Berlyne Memorial Lecture: Acquisition of the uses of Language. *Canadian Journal of Psychology*, 32 (4), 204-218.
- Chafe, W.L. 1972. Discourse structure and human knowledge. In R.O. Freedle & J.B. Carroll (eds.), *Language Comprehension and the Acquisition of Knowledge*. New York: Halsted Press.
- Chafe, W.L. 1976. Givenness, contrastiveness, definiteness, subjects, topics, and point of view. In C. Li (ed.), *Subject and Topic*. New York: Academic Press.
- Chafe, W.L. 1979. The flow of thought and the flow of language. In T. Givón (ed.), *Discourse and Syntax*. New York: Academic Press.

- Chafe, W.L. 1980. (ed.), *The Pear Stories: Cognitive, Cultural and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex.
- Chang, H.W. 1992. The acquisition of Chinese syntax. In H.C. Chen & O.J.L. Tzeng (eds.), *Language Processing in Chinese*. North-Holland: Elsevier Science Publisher.
- Chao, Y.R. 1951. The Cantian idiolect: An analysis of the Chinese spoken by a twenty-eight-month-old child. *University of California Publications in Semitic Philology*, 11, 27-44.
- Chao, Y.R. 1968. *A Grammar of Spoken Chinese*. University of California Press, Berkeley and Los Angeles, California.
- Chen, P. 1984. A discourse analysis of third person zero anaphora in Chinese. Reproduced by the Indiana University Linguistic Club Lindley Hall 310, Bloomington, Indiana 47405, August.
- Chen, P. 1986. Referent introducing and tracking in Chinese narratives. Unpublished doctoral dissertation, University of California, Los Angeles.
- Chen, P. 1987. Shè hàn yú zhōng yǔ míngcí céngfēn yǒu guāng de sìzhǔ gàiniàn. *Zhongguo Yuwen*, 5, 81-90.
- Cheung, H.N. 1972. Cantonese as spoken in Hong Kong. Master's thesis. Chinese University of Hong Kong.
- Christophersen, P. 1939. *The Articles: A Study of Their Theory and Use in English*. Copenhagen: Einar Munksgaard.
- Clancy, P.M. 1980. Referential choice in English and Japanese narrative discourse. In W.L. Chafe (ed.), *The Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex.
- Clancy, P.M. 1992. Referential strategies in the narrative of Japanese children. *Discourse Processes*, 15, 441-467.
- Clark, E.V. 1973. What's in a word? On the child's acquisition of semantics in his first language. In T.E. Moore (ed.), *Cognitive Development and the Acquisition of Language*. New York and London: Academic Press.
- Clark, E.V. 1978a. Locationals: Existential, locative, and possessive constructions. In J.H. Greenberg (ed.), *Universals of Human Language, Vol 4, Syntax*. Stanford University Press.
- Clark, E.V. 1978b. From gesture to word: On the natural history of deixis in language acquisition. In J.S. Bruner & A. Garton (eds.), *Human Growth and Development*. Oxford: Clarendon Press.
- Clark, H.H. & Clark, E. 1977. *Psychology and Language*. New York: Harcourt, Brace, and Jovanovich.
- Cox, M.V. 1986. *The Child's Point of View*. The Harvester Press.
- Cziko, G.A. 1986. Testing the language bioprogram hypothesis: A overview of children's acquisition of articles. *Language*, 63, 878-898.
- Deutsch, W. & Pechmann, T. 1982. Social interaction and the development of definite descriptions. *Cognition*, 11, 159-184.
- Du Bois, J.W. 1980. Beyond definiteness: The trace of identity in Discourse. In W. Chafe (ed.), *The Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex.
- Ehlich, K. 1982. Anaphora and deixis: same, similar, or different? In R. Jarvella & W.

- Klein (eds.), *Speech, Place, and Action: Studies in Deixis and Related Topics*. New York: John Wiley.
- Emslie, H.C. & Stevenson, R.J. 1981. Pre-school children's use of the articles in definite and indefinite referring expressions. *Journal of Child Language*, 8, 313-328.
- Erbaugh, M.S. 1982. Coming to order: Natural selection and the origin of syntax in the Mandarin speaking child. Unpublished doctoral dissertation, University of California, Berkeley.
- Erbaugh, M.S. 1986. Talking stock: the development of chinese noun classifiers historically and in young children. In C. Craig (ed.), *Noun Classes and Categorization*. Amsterdam: John Benjamins.
- Erbaugh, M.S. 1992. The acquisition of Mandarin. In D.I. Slobin (ed.), *The Crosslinguistic Study of Language Acquisition*. Hillsdale, NJ: Erlbaum.
- Ervin-Tripp, S.M. 1971. Some bases for early features of production. *Current Problems in Psycholinguistics*, 13-17 December, 1971, Paris.
- Favell, J.H., Botkin, B.T., Fry, C.L. Wrought, J.W. and Jarvis, P.E. 1968. *The development of role-taking and communication skills in children*. New York: Wiley.
- Fillmore, C.J. 1968. The case for case. In E. Bach & R. Harms (eds.), *Universals in Linguistic Theory*. New York: Holt, Rinehart and Winston.
- Fillmore, C.J. 1982. A descriptive framework for spatial deixis. In R. Jarvella & W. Klein (eds.), *Speech, Place, and Action: Studies in Deixis and Related Topics*. New York: John Wiley.
- Firbas, J. 1964. On defining the theme in functional sentence analysis. *Travaux Linguistiques de Prague*: 1, 267-280.
- Fox, B.A. 1987a. The noun phrase accessibility hierarchy reinterpreted: Subject primacy or the absolutive. *Language*, 63, 856-870.
- Fox, B.A. 1987b. Anaphora in popular written English narratives. In R. Tomlin (ed.), *Coherence and Grounding in Discourse*. Amsterdam: John Benjamins.
- Frachtenberg, L.J. 1913. *Coos Texts*. Columbia University Contributions to Anthropology, Vol. 1. New York: Columbia University Press.
- Garton, A.F., 1984. Article acquisition: theoretical and empirical issue. *Language Sciences*, 6 (1), 81-91.
- Givón, T. 1977. The drift from VSO to SVO in Biblical Hebrew: The pragmatics of tense-aspect. In C.Li (ed.), *Mechanisms for Syntactic Change*. Austin: University of Texas Press.
- Givón, T. 1979. *On Understanding Grammar*. New York: Academic Press.
- Givón, T. 1983a. Topic continuity in discourse: An introduction. In T. Givón (ed.), *Topic Continuity in Discourse: A Quantitative Cross-language Study*. Amsterdam: Benjamins.
- Givón, T. 1983b. Topic continuity in spoken English. In T. Givón (ed.), *Topic Continuity in discourse: A Quantitative Cross-language Study*. Amsterdam: Benjamins.
- Givón, T. 1984. *Syntax: A Functional Approach*. Vol. 1. Amsterdam: John Benjamins.
- Givón, T. 1988. The pragmatics of word-order: Predictability, importance and attention. In M. Hammond, E. Moravcsik, & J. Wirth (eds.), *Studies in Syntactic Typology*. John Benjamins B.V.

- Greenberg, J.H. 1966. Some universals of grammar with particular reference to the order of meaningful elements. In J.H. Greenberg (ed.), *Universals of Language*. Cambridge, Mass: MIT Press.
- Grudel, J.K, Hedberg, N., & Zacharski, R. 1993. Cognitive status and the form of referring expressions in discourse. *Language*, 69 (2), 274-307.
- Halliday, M.A.K. 1975. *Learning How to Mean*. London: Arnold.
- Halliday, M.A.K. & Hasan, R. 1976. *Cohesion in English*. London: Longman.
- Harris, M., Jones, D., & Grant, J. 1983. The nonverbal context of mother's speech to infants. *First Language*, 4, 21-30.
- Haviland, S.E. & Clark, H.H. 1974. What's new? Acquiring new information as a process in comprehension. *Journal of Verbal Learning and Behavior*, 13, 512-521.
- Hawkins, J.A. 1977. The pragmatics of definiteness, Part I. *Linguistische Berichte*, 47: 1-27.
- Hawkins, J.A. 1978a. The pragmatics of definiteness, Part II. *Linguistische Berichte*, 48: 1-27.
- Hawkins, J.A. 1978b. *Definiteness and indefiniteness: A Study in Reference and Grammaticality Predication*. London: Croom Helm.
- Heath, J. 1978. *Ngandi Grammar, Texts, and Dictionary*. Canberra: Australian Institute of Aboriginal Studies.
- Heim, J.R. 1982. The semantics of definite and indefinite noun phrases. Unpublished doctoral dissertation, University of Massachusetts at Amherst.
- Hendriks, H. 1993. Motion and location in children's narrative discourse: a development study of Chinese and Dutch. Unpublished doctoral dissertation, University of Leiden.
- Hetzron, R. 1971. Presentative function and presentative movement. *Studies in African Linguistics, Supplement 2*, 79-105.
- Hickmann, M. 1982. The Development of narrative skills: Pragmatic and metapragmatic aspects of discourse cohesion. Unpublished doctoral dissertation, University of Chicago.
- Hickmann, M. 1987. The Pragmatics of reference in child language: some issues in development theory. In M. Hickmann, (ed.), *Social and Functional Approaches to Language and Thought*. Orlando, FL: Academic Press.
- Hickmann, M. 1988. Topics and subjects in discourse: An analysis of French children's narratives. Paper presented at the Symposium on "Syntax and discourse interface in language development", Third European Conference on Developmental Psychology, Budapest, Hungary, 15-19 June.
- Hickmann, M. 1990. The development of discourse cohesion: Coding manual. Nijmegen: Max-Planck Institute für Psycholinguistik.
- Hickmann, M. 1991a. The development of discourse cohesion: some functional and cross-linguistic issues. In G. Pieraut-le Bonniec & M. Dolitsky (eds.), *Language Bases...Discourse bases*. Amsterdam: John Benjamins.
- Hickmann, M. 1991b. Review of *The Acquisition of Narratives: Learning to Use Language* by M.G.W. Bamberg. *Language*, 67, 111-14.
- Hickmann, M. in press. Discourse organization and the development of reference to person, space, and time. To appear in P. Fletcher & B. MacWhinney (eds.),

- Handbook of Child Language*. Blackwell Publishers.
- Hickmann, M., Hendriks, H., & Liang, J.C.P. 1989. A cross-linguistic study of cohesion in children's narratives: the introduction of referents. Paper presented at Biennial Meetings of the Society for Research in Child Development, April, 27-30.
- Hickmann, M., Hendriks, H., & Liang, J. 1993. Chinese children's marking of information status in narratives. Paper presented at the Second International Congress on Chinese Linguistics, Paris, 23-25 July.
- Hickmann, M. & Liang, J.C.P. 1990. Clause-structure variation in Chinese narrative discourse: A developmental analysis. *Linguistics*, 28, 1167-200.
- Hickmann, M., Liang, J.C.P., & Hendriks, H. 1989. Diskurskohäsion im Erstspracherwerb: Ein Sprachvergleichende Untersuchung. *Zeitschrift für Literaturwissenschaft und Linguistik, Jahrgang 19, Heft 73*, 53-73.
- Hickmann, M., Liang, J.C.P., & Van Crevel, M. 1989. The given/new distinction in children's narratives: A cross-linguistic analysis. Paper presented at the 10th Biennial Meeting of the International Society for the Study of Behavioral Development, Finland.
- Hinds, J. (ed.) 1978. *Anaphora in discourse*. Edmonton, Alberta: Linguistic Research.
- Hinds, J. 1982. *Ellipsis in Japanese Discourse*. Albert: Linguistic Research.
- Hinds, J. 1983. Topic continuity in Japanese. In T. Givón (ed.), *Topic Continuity in Discourse: A Quantitative Cross-language Study*. Amsterdam: John Benjamins.
- Hinds, J. 1984. Topic maintenance in Japanese narratives and Japanese conversational interaction. *Discourse Processes*, 7, 465-482.
- Hoek, D., Ingram, D., & Gibson, D. 1986. Some possible causes of children's early word overextensions. *Journal of Child Language*, 13, 477-494.
- Huang C.-T. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry*, 15, 531-574.
- Jarvella, R. & Klein, W. 1982. (eds.), *Speech, Place, and Action: Studies in Deixis and Related Topics*. New York: John Wiley.
- Kail, M. & Hickmann, M. 1992. French children's ability to introduce referents in narratives as a function of mutual knowledge. *First Language*, 12, 73-94.
- Karmiloff-Smith, A. 1979. *A Function Approach to Child Language: A study of determiners and reference*. Cambridge: Cambridge University Press.
- Karmiloff-Smith, A. 1980. Psychological processes underlying pronominalization and nonpronominalization in children's connected discourse. In J. Kreiman & E. Ojeda (eds.), *Papers from the Parasession on Pronouns and Anaphora*. Chicago: Chicago Linguistic Society.
- Karmiloff-Smith, A. 1981. The grammatical marking of thematic structure in the development of language production. In W. Deutsch (ed.), *The Child's Construction of Language*. London: Academic Press.
- Keenan, E.O. & Schieffelin, B.B. 1976. Topic as a discourse notion: A study of topic in the conversations of children and adults. In C.N. Li (ed.), *Subject and Topic*. New York: Academic press.
- Klein, W. 1990. A theory of language acquisition is not so easy. *Studies in Second Language Acquisition*, 12, 219-231.
- Levinson, S.C. 1983. *Pragmatics*. Cambridge: Cambridge University Press.
- Li, C.N. & Thompson, S.A. 1975. The semantic function of word-order in Mandarin

- Chinese. In C. N. Li (ed.), *Word Order and Word Order Change*. Austin: University of Texas Press.
- Li, C.N. & Thompson, S.A. 1976. Subject and topic: A new typology of language. In C.N. Li (ed.), *Subject and Topic*. New York: Academic Press.
- Li, C.N. & Thompson, S.A. 1979. Third person pronouns in zero-anaphora in Chinese discourse. In Givón T. (ed.), *Syntax and Semantics: Discourse and Syntax*. New York: Academic Press.
- Li, C.N. & Thompson, S.A. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley: University of California Press.
- Lyons, J. 1975. Deixis as the source of reference. In E.L. Keenan (ed.), *Formal Semantics of Natural Language*. Cambridge: Cambridge University Press.
- Lyons, J. 1977. *Semantics*. Cambridge: Cambridge University Press.
- Lyons, J. 1979. Deixis and anaphora. In T. Myers (ed.), *The Development of Conversation and Discourse*. Edinburgh: Edinburgh University Press.
- MacWhinney, B. 1977. Starting points. *Language*, 53, 152-168.
- MacWhinney, B. 1991. *The CHILDES Project: Tools for Analyzing Talk*. Hillsdale, NJ: Erlbaum.
- Macwhinney, B. & Bates, E. 1978. Sentential devices for conveying givenness and newness: A cross-cultural developmental study. *Journal of Verbal Learning and Verbal Behavior*, 17, 539-558.
- MacWhinney, B. & Snow, C. 1990. The child language data exchange system: An update. *Journal of Child Language*, 17, 457-472.
- Maratsos, M. 1974. Preschool children's use of definite and indefinite articles. *Child Development*, 45, 446-455.
- Maratsos, M. 1976. *The Use of Definite and Indefinite Reference in Young Children: An Experimental Study in Semantic Acquisition*. Cambridge: Cambridge University Press.
- Mathesius, V. 1928. On the linguistic characterology of modern English. *Actes du Premier Congres International de Linguistique a la Haye*.
- McTear, M.F. 1985. *Child's Conversation*. New York: Basil Blackwell.
- Megin-Peterson, C. 1975. The modification of communicative behavior in preschool-aged children as a function of the listener's perspective. *Child Development*, 46, 1015-18.
- Miao, X.C. 1986. Word order and semantic strategies in Chinese sentence comprehension. *International Journal of Psycholinguistics*, 8-3 (23), 109-122.
- Miao, X.C. & Zhu, M.Z. 1992. Language development in Chinese children. In H.C. Chen & O.J.L. Tzeng (eds.), *Language Processing in Chinese*. Elsevier Science Publisher B.V.
- Miao, X.C., Chen, G.P., & Ying H.C. 1986. Cíxù hē cíyì zài hànyú yǔjù lǐjiézhōng de zuòyòng (The functions of word order and semantics in the comprehension of Chinese sentence). In M.S. Zhu (ed.), *Értóng Yǔyán Fāzhǎn Yánjiū (Studies in Child Language Development)*. Shanghai: Huādōng shīfàn dàxué chūbǎnshè.
- Min, R.F. & Xu, Z.Y., 1993. Pronoun reversals in young Mandarin Chinese. Paper presented at the Sixth International Congress on the Study of Child Language, 18-24th July, Trieste, Italy.
- Mithun, M. 1987. Is basic word order universal? In R. Tomlin (ed.). *Coherence and*

- Grounding in Discourse*. Amsterdam: John Benjamins.
- Ochs, E.O., Schiefflin, B., & Platt, M. 1979. Propositions across utterances and speakers. In E.O. Ochs & B. Schieffelin (eds.), *Development Pragmatics*. New York: Academic Press.
- Olson, D.R. 1970. Language and thought. *Psychological Review*, 77, 257-273.
- Payne, D.L. 1985. Aspects of the grammar of Yagua: A typological perspective. Unpublished doctoral dissertation, University of California at Los Angeles.
- Payne, D.L. 1987. Information structuring in Papago narrative. *Language*, Vol. 63, No. 4, 783-804.
- Pechmann, T. & Deutsch, W. 1980. From gesture to word and gesture. *Paper and Reports on Child Language Development*, Vol. 19, 113-120. Stanford University.
- Pechmann, T. & Deutsch, W. 1982. The development of verbal and nonverbal devices for reference. *Journal of Experimental Child Psychology*, 34, 330-341.
- Peterson, C. 1990. The who, when, and where of early narratives. *Journal of Child Language*, 17, 433-455.
- Peterson, C. & Dodsworth P. 1991. A longitudinal analysis of young children's cohesion and noun specification in narratives. *Journal of Child Language*, 18, 397-415.
- Piaget, J. 1926. *The Language and the Thought of the Child*. New York: Harcourt Brace.
- Piaget, J. 1959. *The Language and the Thought of the Child*. (The second edition of Piaget, J. 1926. *The Language and the Thought of the Child*. New York: Harcourt Brace.) London: Routledge & Kegan Paul Ltd.
- Pu, M. 1989. Topic continuity in written Mandarin discourse. In Proceedings of the 15th Annual Meeting of the Berkeley Linguistic Society, February, 18-20.
- Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. 1972. *A Grammar of Contemporary English*. Longman Group Ltd.
- Saito, K. 1980. Children's acquisition of deictic and anaphoric reference in Japanese conversation. Paper presented on the International Society for the Study of Behavioral Development, Finland.
- Slobin, D.I. 1973. Cognitive prerequisites for the development of grammar. In C.A. Ferguson & D.I. Slobin (eds.), *Studies in Child Development*. New York: Holt, Rinehart and Winston.
- Slobin, D.I. 1985. Crosslinguistic evidence for the language-marking capacity. In D. I. Slobin (ed.), *The Cross-linguistic Study of Language Acquisition*. Hillsdale, N.J.: Erlbaum.
- Slobin, D.I. 1991. Learning to think for speaking: Native language, cognition, and rhetorical style. *Pragmatics*, 1, 7-26.
- Silverstein, M. 1981. Cognitive implications of a referential hierarchy. In Hickmann, M. (ed.), *Social and Functional Approaches to Language and Thought*. Orlando, Florida: Academic Press.
- Stern, D. 1974. Mother and infant at play. In M. Lewis & L. Rosenblum (eds), *The Effect of the Infant on its Caregiver*. New York: John Wiley.
- Sun, C.-F. & Givón, T. 1985. On the so-called SOV word order in Mandarin Chinese: A quantified text study and its implications. *Language*, 61 (2) 329-351.
- Szeto, K. 1993. Referentiality and definiteness in child Cantonese. A revised version

- of the paper presented at the Annual Research Forum on December 1992.
- Thompson, S.A. 1978. Modern English from a typological point of view: some implications of the function of word order. *Linguistische Berichte*, 54, 192-77.
- Tomlin, R. 1986. *Basic Word Order: Functional Principles*. Kent: Croom Helm Ltd.
- Tomlin, R. 1989. *Focal Attention and Activated Memory and the Referential Management of Discourse Production*. Eugene: University of Oregon, Department of Linguistics.
- Tomlin, R. & Rhodes, R. 1979. An introduction to information distribution in Ojibwa. In P. Clyne et al (eds.), *Papers from the Fifteenth Regional Meeting of the Chicago Linguistic Society*. Chicago: University of Chicago.
- Tsao, Feng-fu. 1977. A functional study of topic in Chinese: The first step toward discourse analysis. Taipei: Student Book Co., Ltd.
- Tseng, Chiu-yu. 1987. Chung yang yen chiu yuan li shih yu yen yen chiu so chi k'an. (Preliminary observations of children's acquisition of Mandarin Chinese). *Bulletin of the Institute of History and Philology Academia Sinica*, 58 (4), Dec. 719-741.
- Wang, L. 1977. *Hanyu Shi Gao (A sketch of Historical Chinese)*. Beijing: China Books.
- Warden, D.A. 1973. An experimental investigation into the child's developing use of definite and indefinite reference. Unpublished doctoral thesis, University of London.
- Warden, D.A. 1976. The influence of context on children's use of identifying expressions and reference. *British Journal of Psychology*, 3, 283-286.
- Warden, D.A. 1981. Learning to identify referents. *British Journal of Psychology*, 72 (1), 93-99.
- Werner, H. & Kaplan, B. 1963. *Symbol Formation*. New York: Wiley.
- Weissenborn, J. & Klein W. 1982. *Here and There: Cross-linguistic Studies in Deixis and Demonstration*. Amsterdam: John Benjamins.
- Wu, T.M. & Xu, Z.Y. 1979. A preliminary analysis of children's language during the first three years. *Acta Psychologica Sinica*, 2, 153-165. Beijing.
- Xu, Z.Y. & Min, R.F. 1992. A study on the acquisition of personal pronouns by Mandarin-speaking children. *Acta Psychologica Sinica*, 4, 337-345.
- Xu, Z.Y., Min, R.F., & Chen, P. 1992. The universality of language acquisition. Paper presented at the Second Asian-African Conference on Psychology, summer, Beijing.
- Zhu, M.Z. & Miao, X.C. 1990. Zhōngguó értóng kǒutóu yúyán fāzhǎng de yánjiū (Studies on the language development of Chinese children). In F. Liu (ed.), *Xīnlǐ Fāzhǎn de Jìnjī Yánjiū (Recent Studies on Developmental Psychology)*. Beijing: Beijing Shifan Xueyuan Chubanshe.

Samenvatting

De verwerving van refererende uitdrukkingen door jonge Chinese kinderen:

een longitudinale studie van vormen en functies van vroege nominale constituenten

Talige vormen kunnen niet los gezien worden van hun functies. Van alle mogelijke functies is de belangrijkste en meest wezenlijke misschien wel het kunnen refereren naar entiteiten: entiteiten waarnaar gerefereerd wordt noemen we *referenten*. Een referent kan een ding, een persoon of iets abstracts. Het kan iets zijn dat specifiek is (bijv. *mijn woordenboek* is dik) of iets dat niet specifiek is (bijv. *woordenboeken* zijn dik). Een spreker kan het over een *gegeven* referent hebben (bekend voor spreker en toehoorder), bijv. *het stadhuis*, of over een *nieuwe* referent, bijv. *een gast*. Hij kan bovendien spreken over een referent die zich in de onmiddellijke, niet-talige omgeving van spreker en toehoorder bevindt, bijv. *dit kopje*, of over een niet aanwezige ('remote') referent, bijv. *een museum in Amsterdam*, enz.

Minstens twee distincties zijn noodzakelijk voor het concept 'referentie': enerzijds het onderscheid tussen *specifieke* en *niet-specifieke referentie*, anderzijds het onderscheid tussen *gegeven* en *nieuwe* informatie. Deze distincties komen in alle Indo-Europese en niet Indo-Europese talen voor. Talen verschillen echter in de manier waarop ze deze distincties uitdrukken. Ze kunnen bijvoorbeeld gebruik maken van een oppositie van lidwoorden (bepaalde vs. onbepaalde), een oppositie van woordvolgordes (voor vs. achter het werkwoord) of van beide.

Sinds kort is er in onderzoek naar taalverwerving een toenemende belangstelling waar te nemen (theoretisch zowel als empirisch) voor de vraag: "Hoe wordt het referentiële systeem geleerd?" Meer specifiek heeft het onderzoek zich toegespitst op de vraag hoe kinderen de middelen leren die noodzakelijk zijn voor het encoderen van referentiele distincties in hun taal en de functies die deze middelen hebben. Wat de verwerving van deze middelen door jonge kinderen aangaat, bestaan er verschillende opvattingen (zie Hfdst. 3). Het doel van dit proefschrift is bij te dragen aan het begrip van de ontwikkeling van het refereren door middel van een onderzoek naar de verwerving van het Mandarijn Chinees.

Hoofdstuk één introduceert een aantal grondbegrippen aangaande het refereren, zoals gebruikt in deze studie. Het refereren is onderwerp van veelvuldige, intensieve

studies geweest in taalkunde, filosofie en psychologie. Deze studies hebben talrijke empirische bevindingen, theorieën en terminologieën voortgebracht. In de huidige context is het mogelijk noch wenselijk al deze werken in detail te bespreken. We zullen derhalve slechts een klein aantal groundbegrippen uiteenzetten, waaronder het onderscheid tussen *specifieke* en *niet-specifieke* referentie enerzijds, en het onderscheid tussen *gegeven* en *nieuwe* informatie anderzijds. Deze distincties vindt men in alle talen, maar ze worden in de diverse talen verschillend weergegeven. De presentatie stelt zich niet tot doel enig nieuw licht op het verschijnsel te werpen. Ze is uitsluitend bedoeld als introductie van het onderzoekskader voor het empirische deel van de studie.

Hoofdstuk twee is een introductie van de linguïstische middelen voor het encoderen van specifieke versus niet-specifieke referentie, en nieuwe versus gegeven informatie. De nadruk ligt daarbij op de beschikbare middelen in het Mandarijn Chinees.

Hoofdstuk drie geeft een overzicht van relevante studies aangaande de verwerving van het refereren in diverse talen. De discussie is geconcentreerd rond twee onderwerpen. Ten eerste: studies aangaande de ontwikkeling van het refereren die leiden tot verschillende conclusies ten aanzien van het tijdstip waarop kinderen de linguïstische competentie verwerven voor het refereren. Ten tweede: een aantal studies in het kader van Bickerton's Language Bioprogram Hypothesis laat een aantal vragen onbeantwoord. Om deze vragen te kunnen onderzoeken, is het noodzakelijk kinderen te bestuderen die niet Indo-Europese talen leren.

In hoofdstuk vier worden het doel en de methode van de huidige studie geïntroduceerd. Toegelicht wordt hoe informatie over de verwerving van het Mandarijn Chinees ons een beter inzicht in het verwervingsproces in het algemeen kan geven. Longitudinale data van 5 Mandarijn sprekende kinderen in de leeftijd van 0;6 tot 3;6 vormen de database voor deze studie. In het onderzoek gaat het om de volgende vragen: (1) onderscheiden jonge Chinese kinderen specifieke van niet-specifieke referentie, en gegeven van nieuwe informatie; (2) hoe encoderen zij deze distincties in linguïstische middelen en doen zij dit wel of niet zoals volwassen sprekers dat doen; (3) is het verwervingsproces in het Chinees identiek aan dat proces in andere talen?

In hoofdstuk 5 worden resultaten gepresenteerd aangaande de markering van specifieke versus niet-specifieke referentie door jonge Chinese kinderen. Het blijkt dat, met uitzondering van een aantal ambigue gevallen, Chinese kinderen specifieke en niet-specifieke referentie inderdaad onderscheiden; definitieve refererende uitdrukkingen worden slechts voor specifieke referenten gebruikt; andere uitdrukkingen, zoals een zelfstandig naamwoord zonder determinatoren, zelfstandig naamwoorden met telwoord en maatwoord, nominalisaties (DE-constructies) en verwantschapsterminologie zonder bezittelijk voornaamwoorden of determinatoren worden voor specifieke én niet-specifieke referentie gebruikt. Uit de resultaten blijkt dat Mandarijn sprekende kinderen vóór de leeftijd van 3;6 al enige kennis bezitten van specifieke en niet-specifieke

referentie en dat zij voor het tot uitdrukking brengen van deze distinctie de correcte linguïstische middelen gebruiken. Deze resultaten komen overeen met eerdere bevindingen op dit gebied (bijv. Brown, 1973; Maratsos, 1974, 1976). Bovendien worden *zelfstandig naamwoorden met telwoord en maatwoord* aanvankelijk altijd in één bepaalde situatie gebruikt, namelijk voor niet-specifieke-potentiele referentie, dat wil zeggen in gevallen waar specifieke referentie met grote waarschijnlijkheid geconcretiseerd gaat worden (bijv. *een boot maken*).

Hoofdstuk 6 gaat over de vraag hoe jonge Chinese kinderen de linguïstische middelen verwerven voor het introduceren van referenten. Uit de resultaten van het onderzoek blijkt dat de middelen van de kinderen voor het introduceren van nieuwe referenten (nieuwe informatie) evenals voor het behouden van de referentie aan een entiteit (gegeven informatie) deictisch zijn. Het gebruik van volwassen middelen voor het introduceren van referenten, namelijk zelfstandig naamwoorden met telwoord en maatwoord en/of positie achter het werkwoord, neemt toe met leeftijd, maar is niet productief vóór de leeftijd van 3;6. Het gebruik van deze middelen is aanvankelijk gekoppeld aan enkele functies van deze middelen (bijv. in vertelsituaties), maar niet aan alle (bijv. als een talig middel ter introductie van alle nieuwe informatie, onafhankelijk van discourse type). De positie van nominale constituenten wordt aanvankelijk meer bepaald door de semantische "rol eigenschappen" *agens* en *object van een handeling*, dan door de pragmatische markering van gegeven vs. nieuw.

In hoofdstuk 7 wordt nagegaan hoe jonge Chinese kinderen de middelen voor het behouden van referentie leren gebruiken. Pronominalisering is aanvankelijk niet gebaseerd op de voorafgaande linguïstische context, maar meer op de notie van *topicaliteit*. Topicale referenten worden makkelijk gepronominaliseerd. Het gebruik van persoonlijk voornaamwoorden op basis van de linguïstische context (anaphorisch gebruik) worden niet verworven voor de leeftijd van 3;6.

In hoofdstuk acht worden de bevindingen van de studie samengevat en vergeleken met relevante bevindingen uit eerdere studies. Als resultaat van het onderzoek kan worden vastgesteld dat taalverwerving niet onafhankelijk van een algemene cognitieve capaciteit noch van taalspecifieke factoren verklaard kan worden.

Appendix I

Longitudinal Database of Five Mandarin-Speaking Children¹

Data of Dandan

AGE	MONTHS	NO. OF U.	MOR.	RATIO/MLU	SD
0;11.28	11.9	53	85	1.604	0.978
1;0.19	12.6	23	35	1.522	0.580
1;1.4	13.1	50	71	1.420	0.695
1;1.15	13.5	54	90	1.667	0.923
1;2.14	14.5	44	110	2.500	3.829
1;2.20	14.7	9	9	1.000	0.000
1;2.28	14.9	37	63	1.703	1.572
1;3.4	15.1	122	174	1.426	1.108
1;4.16	16.5	104	185	1.779	1.152
1;7.25	19.8	197	361	1.832	0.949
1;8.3	20.1	212	462	2.179	1.358
1;8.10	20.3	125	228	1.824	0.964
1;8.17	20.6	32	69	2.156	1.787
1;8.24	21.8	125	243	1.944	1.006
1;9.0	21.0	126	236	1.873	1.091
1;9.10	21.3	83	154	1.855	0.996
1;9.18	21.6	175	330	1.886	0.925
1;9.25	21.8	177	342	1.932	1.103
1;10.0	22.0	176	409	2.324	1.198
1;10.8	22.3	297	703	2.367	1.776
1;10.15	22.5	318	671	2.110	1.212
1;10.22	22.7	272	628	2.309	1.500

¹ The sessions in bold are analyzed in this study.

Data of Mengmeng

AGE	MONTHS	NO. OF U.	MOR.	RATIO/MLU	SD
1;1.12	13.4	116	229	1.974	1.836
1;3.9	15.3	135	269	1.993	1.417
1;3.15	15.5	180	240	1.333	0.587
1;3.19	15.6	132	219	1.659	0.833
1;3.25	15.8	156	265	1.699	0.916
1;3.29	16.0	36	37	1.028	0.164
1;4.6	16.2	128	206	1.609	1.070
1;5.30	18.0	164	345	2.104	1.135
1;7.7	19.2	37	76	2.054	1.643
1;7.9	19.3	209	415	1.986	1.200
1;7.10	19.4	211	707	3.351	2.587
1;7.16	19.5	185	439	2.373	1.338
1;10.13	22.4	82	228	2.780	1.675
1;10.30	23.0	137	285	2.080	1.335
1;11.12	23.4	91	188	2.066	1.184
2;0.0	24.0	243	722	2.971	1.797
2;1.13	25.4	119	366	3.076	1.450
2;2.27	26.9	91	246	2.703	1.866
2;3.6	27.2	143	506	3.538	1.928
2;7.3	31.1	58	169	2.914	1.764
3;0.5	36.2	219	732	3.342	2.571
3;0.11	36.4	172	587	3.413	2.217
3;0.19	36.6	301	1024	3.402	1.982
3;0.26	36.8	283	1210	4.276	2.421
3;1.10	37.3	122	468	3.836	2.559
3;1.16	37.5	22	53	2.409	1.073
3;1.22	37.7	160	630	3.938	2.117
3;1.28	37.9	154	589	3.825	2.280
3;2.3	38.1	135	551	4.081	1.951
3;2.14	38.5	319	1374	4.307	2.365
3;2.22	38.7	233	968	4.155	2.399
3;2.26	38.9	262	1071	4.088	2.326
3;3.4	39.1	330	1368	4.145	2.377
3;4.15	40.5	331	1492	4.508	2.733
3;5.28	41.9	118	457	3.873	2.465

Data of Mallang

AGE	MONTHS	NO. OF U.	MOR.	RATIO/MLU	SD
1;8.13	20.4	176	367	2.097	0.946
1;8.19	20.6	174	376	2.161	1.061
1;8.26	20.9	125	245	1.960	0.880
1;9.5	21.2	163	323	1.982	0.962
1;9.11	21.4	89	228	2.562	1.161
1;9.18	21.6	103	210	2.039	1.114
1;10.1	22.0	166	453	2.729	0.966
1;10.10	22.3	116	273	2.353	1.302
1;10.16	22.9	168	354	2.107	0.994
1;10.28	22.9	23	45	1.957	0.751
1;11.8	23.3	116	260	2.241	1.142
1;11.13	23.4	84	187	2.226	1.199
1;11.20	23.7	85	212	2.494	1.233
1;11.27	23.9	83	199	2.398	1.161
2;0.4	24.1	49	125	2.551	1.310
2;0.11	24.4	9	23	2.556	0.831
2;0.20	24.7	93	217	2.333	1.081
2;2.10	26.3	29	94	3.241	1.072

Data of Jiajia

AGE	MONTHS	NO OF U	MOR	RATIO/MLU	SD
2;6.8	30.3	167	506	3.030	1.796
2,6 15	30 5	231	865	3 745	1 884
2;6.22	30.7	302	1110	3.675	2.088
2;7.0	31.0	249	705	2.831	1.725
2,7 9	31 3	210	754	3 590	1 842
2;7.19	31.6	270	1135	4.204	2.439
2,7 27	31 9	280	1174	4 193	2 044
2;8.3	32.1	231	851	3.684	1.828
2,8 10	32 3	346	1347	3 893	1 944
2;8.17	32.6	379	1582	4.174	2.098
2,8 23	32 8	329	1308	3 976	2 237
2;9.11	33.4	368	1245	3.383	1.734
2,9 18	33 6	371	1354	3 650	1 970
2;10.5	34.2	308	1120	3.636	2.087
2;10.13	34.4	334	1171	3.506	1.911

Data of Duanlian

AGE	MONTHS	NO. OF U.	MOR.	RATIO/MLU	SD
3;1.20	37.7	95	315	3.316	1.865
3;1.27	37.9	314	1230	3.917	2.252
3;2.4	38.1	224	896	4.000	2.407
3;2.11	38.4	190	776	4.084	2.288
3;2.18	38.6	119	434	3.647	2.281
3;3.1	39.0	184	689	3.745	2.143
3;3.7	39.2	171	646	3.778	2.080
3;3.15	39.5	72	248	3.444	2.088
3;3.22	39.7	81	350	4.321	2.243
3;2.28	39.9	468	2140	4.573	2.397
3;4.5	40.2	397	1529	3.851	2.237
3;4.12	40.4	266	985	3.703	2.461
3;4.19	40.6	434	1472	3.392	2.011
3;4.27	40.9	282	1109	3.933	2.263
3;5.4	41.1	87	372	4.276	2.835

Appendix II

Stories Produced by the Children

Story One: A Bear and Two Children

(JJ2;8.17)

- (1) CHI Cóngqián yǒu ge xiǎo gūniang
before exist CL little girl
giāniang
girl
- jiàozuò Jīnhuā
be-called Jinhua
- Once upon a time, there was a little girl named Jinhua
- 2/ Tā hé tā māma hé tā dìdì zài yìkuài
3p and 3p mother and 3p brother be together
She and her mother and her brother were all together.
- 3/ Tā-men ne bǎ yáng guān-huí jiā.
3p-PLU PATL BA sheep enclose-return home.
They locked the sheeps into the house
- 4/ Tā-men jù kàn nǎinai.
3p-PLU just see grandmother
Then they saw granny
- 5/ + " Nǎinai-..
grandmother
"Granny!"
[= They call their granny at the door].
- 6/ + " Zhèli méi shēngyīn le, shuō Jīnhua (?).
there no sound LE say Jinhua
"I don't hear anything", said Jinhua.
- 7/ Xióng wàibó shuō +"/
bear grandmother say
The granny bear [= the granny, a bear pretended as the kids's granny] said
- 8/ + " Wǒ shì nǎinai.
1p be grandmother
"I am (your) granny".
- 9/ <Zhè tuī jiě> [/] <Zhè tuī jiě> [//]
this/here push sister sister
This one pushed sis .. this one pushed sis ..
- Zhè xiǎo nánhár tuī jiějie ba.
this little boy push sister PATL
This little boy pushed (his) sister
[= The boy pushes his sister to let him to open the door.]
- ADU. Xiǎo nánhár tuī jiějie # shì ba?
little boy push sister # be Q
The little boy pushed (his) sister, was it that?
- 10/ CHI Xióng jìn-lái le
bear enter-come LE
The bear came in.
- 11/ Tā yí kàn kàn-bú-jiàn.
3p one look look-not-see
He/she looked, but could see nothing

- ADU: Xióng jìn-lái la.
bear enter-come LE
The bear had come in.
- Xióng zěnme shuō ne?
bear what say Q
What did the bear say?
- 12/ CHI: Tā zuò xià.
3p sit down
He sat down.
- 13/ Tā zuò le yīhòu +/
3p sit LE after
After he sat down, ...
- ADU: Tā zěnme bú zuò bǎndèng ne?
3p why not sit stool Q
Why didn't he sit on a stool?
- 14/ CHI: Tā pìpì a.
3p bottom Q
(Because of) his bottom.
- 15/ Ø jiào le qīlái.
ø shout LE out
(He) shouted out.
- [=! The bear had a tail. He felt pain when sitting on his tail.]
- 16/ CHI: ??
- 17/ A # tā jiào le qīlái.
Aham # 3p shout LE out
Aham, he shouted it out.
- 18/ Xióng ao@o xióng jiào le.
bear ao@o bear shout LE
The bear, "ouch!", shouted the bear out.
- 19/ Házǐ-men xià le yī-tiào le.
kid-PLU afraid LE one-jump LE
The children were really frightened.
- ADU: En # xióng yī-jiào
Aham # bear one-shout
Aham, the bear shouted
- Házǐ-men xià yī-tiào le # shì ma?
kid-PLU afraid one-jump LE # be Q
so that the children were frightened.
- 20/ CHI: En.
yes
Yes.
- ADU: Zhèr ne?
here Q
and here?
- 21/ CHI: Ø guò-qù ná kuāng le.
ø over-go take basket LE
(She) went over to fetch a/the basket.
- ADU: Ø ná kuāng zuò shénme ne?
ø take basket do what Q
What did (she) fetch the basket for?

- 22/ CHI Tā gǎnmá duǒ zìjǐ?
3p why hide self
Why did he hide himself?
- 23/ Tā gǎnmá duǒ-zhe liǎn ya?
3p why hind-ZHE face Q
Why did he cover his face?
- 24/ Gǎnmá duǒ-zhe liǎn de?
why hind ZHE face Q
Why did (he) cover his face?
- 25/ Tā gěi tā ná kuāng
3p give 3p take basket
She got the basket for him
- 26/ <Tā ne> [/] # Tā dìdì duǒ-zhe liǎn
3p PATL 3p brother hind-ZHE face
She/he, her brother covered his face
- ADU Xiǎo dìdì wǔ-zhe liǎn shì ma?
little brother cover-ZHE face be Q
So the little brother covered his face, doesn't he?
- 27/ CHI Ø gǎnmá wǔ-zhe liǎn ya?
Ø why cover face Q
Why did he cover his face?
- 28/ <Dìdì> [/] # dìdì gǎnmá wǔ-zhe liǎn ya?
brother brother why cover-ZHE face Q
Why did the little brother cover his face?
- ADU Dìdì kěnéng(?) qíguài(?) # shì ma?
brother maybe (?) odd (?) # be Q
The brother maybe fell odd, was it that?
- 29/ CHI En, kě néng (?) qíguài (?)
yes, maybe (?) odd (?)
Yes, (he) maybe fell odd
- 30/ Tā # wǔ-zhe liǎn # ao
3p # cover-ZHE face # PATL
He covered (his) face
- 31/ ??
- 32/ Nǎinai shuō ràng tā <zài> [/] zài/at
grandmother say let 3p be/at
wàitou shuì língwài yī-ge wūzi ne
outside sleep another one-CL room PATL
The granny said to let him sleep outside, in another room
- ADU Shéi dào língwài yī-ge wūzi qù le?
who to another one-CL room go LE
Who went to another room?
- 33/ CHI <Tā> [/] <Tā> [/] # Tā shuān-shàng nèi-ge fángshuān
3p 3p # 3p shut-on that-CL house-lock
He He He locked that house
- ADU Tā jiào dìdì dào língwài yī-ge fáng shuì shì ma?
3p tell brother to another one-CL room sleep be Q
So he told the little brother to go sleep in another room, was that it?
- 34/ CHI En
yes
Yes

- 35/ Tā jù bǎ[ràng] tā shàng língwài yī-ge wū qù le.
3p just let go another one-CL room go LE
He then made him go to another room
- 36/ Tā gěi Jínhua +/.
3p gave Jínhua
He gived Jínhua...
- ADU: Hòulái tā zěnmeyàng le?
later 3p how LE
What has happened then?
- 37/ CHI: Tā gěi dìdì dīnghuǒ (?).
3p gave brother ??
He gave the boy ??.
- ADU: Tā gěi dìdì zěnmé le?
3p gave brother what LE
What did he give the boy?
- 38/ CHI: Tā ná zhè qīlái gěi dìdì dīnghuǒ (?).
3p take this up give brother ??
He took this for the brother to ??.
- 39/ Tā ná zhè qīlái +/.
3p take this up
He took this up . .
- ADU: Tā bǎ dìdì-de mén suǒ-shàng le, shì ma?
3p BA brother's door lock-on LE, be Q
He locked the brother's door, was it that?
- 40/ CHI: Tā nèi-ge jù huí lái le.
3p that-CL just return LE
She, then, came home.
- [JJ stopped telling the story]

Story Two: A Seven Color Flower

(MM3;0.5)

[MOT asked MM to tell the story of Qīshèhuā (seven-color-flower) on the picture book in front of them MOT elicited MM to tell story:]

- MOT: Yǒu yī-ge xiǎo gūniang jiào Zhenni, shì-bú-shì ya?
exist one-CL little girl call Zhenni, be-not-be Q
There was a girl called Zhenni, wasn't she?
- 1/ CHI: Tā lǐn-zhe miànbǎoquār huí jiā qù le.
3p carry-ZHE pretzel return home go LE
She went home carrying pretzels.
- 2/ Hòulái xiǎo gǒu kàn-jàn ø le.
Later little dog look-ASP ø LE
Later, (a) little dog saw (it).
- 3/ Xiǎo gǒu chán le xiǎng chī ø,
little dog greedy LE want eat ø,
The little dog greedily wanted to eat (it).
- 4/ Ø jù chī-wán le
ø just eat-ASP LE
Then (he) ate everything up.

- MOT: Zhenni zěnme fāxiàn tā-de miànbǎoquār <chī> [/]
 Zhenni how find 3p-de pretzel eat ...
 bèi xiǎo gǒu chī le ?
 BEI little dog eat LE
 How did Zhenni find out that her pretzel had been eaten by the little dog?
- 5/ CHI: <∅ wàng qián kàn> [/]
 ∅ toward front look
 ∅ wàng hòu kàn, jiù kàn-jiàn le.
 ∅ toward back look, just look-ASP LE
 (She) looked forwards She looked backwards and then (she) saw it.
- MOT: Tā shì-bú-shì juéde shǒu-lǐ-de miànbǎoquār
 3p be-not-be feel hand-in-DE pretzel
 yuè-lái-yuè-qīng le.
 more-come-more-light LE
 Did she feel the pretzels in her hand becomes lighter and lighter?
- 6/ CHI: A.
 yes
 yes.
- MOT: Huí lái yī kàn +...
 return one look...
 Then, in one look ...
- 7/ CHI: ## ∅ ràng xiǎo gǒu gěi chī guāng le.
 ∅ let little dog give eat empty LE
 (They) has been eaten up by the little dog.
- MOT: Tā zěnmebàn ne?
 3p how Q
 What did she do?
- 8/ CHI: Mǎ le yī-dùn xiǎo gǒu.
 scold LE one-CL little dog
 (She) scolded the little dog.
- 9/ Xiǎo gǒu pǎo le.
 little dog run LE
 The little dog ran away.
- 10/ Tā qù zhuī xiǎo gǒu.
 3p go chase little dog
 She went after the little dog.
- 11/ Xiǎo gǒu zhuī bù zháo.
 little dog chase not reach
 But the little couldn't be chased.
- 12/ ∅ zhuī dào yī-ge méi lù de dìfang.
 ∅ chase to one-CL not road de place
 (She) followed (him) to a place where there were no roads.
- MOT: Hòulái ne?
 then Q
 And then?
- 13/ CHI: Hòulái <yī-ge> [/] yī-wèi lǎo bóbo lái le.
 Later one-CL one-CL old man come LE
 Then, an old man arrived.
 <Hòulái> [/] # hòulái ∅ gěi tā lǐng dào huāyuán.
 later later ∅ give 3p bring to garden
 Then, then (he) guided her to a garden.

- 14/ Ø zhāi le yī-duǒ huār.
 ø pluck LE one-CL flower
 (He) plucked a flower.
- MOT: Shì yī-duǒ shénme yàng de huār ya?
 be one-CL what kind DE flower Q
 What kind of flower was it?
- Shì yī-duǒ shénme yàng de huār?
 be one-CL what kind DE flower
 What kind of flower was it?
- 15/ CHI: Ø bù zhīdào.
 ø not know
 (I) don't know.
- MOT: En?
 uhm
 Uhm?
- Ø zěnme wàng ø le ne?
 ø how forget ø LE Q
 Did you forget (it)?
- Shì yī-duǒ jǐ-zhōng yánsè de huā ya?
 be one-CL how-many-CL color DE flower Q
 It was a flower with how many colors?
- 16/ CHI: Ø bù zhīdào.
 ø not know
 (I) don't know.
- MOT: Qī-sè huār ya.
 seven-color flower PATL
 A seven color flower!
- Ø zěnme jìdù bù zhīdào le ne?
 ø how just not know le Q
 How come you didn't know?
- 17/ CHI: Qī-sè huār.
 seven-color flower
 A seven color flower.
- MOT: Duì le.
 right LE
 Right!
- Tā yǒu qī-ge huābàr.
 it have seven-CL petal
 It had seven petals.
- Měi-ge huā-bar de yánsè dōu bù yíyàng.
 every-CL flower-petal DE color all not same
 All the flower-petal were of a different color.
- Shì qī-zhōng yánsè.
 be seven-CL color
 (It) were seven colors.
- Suǒyǐ jiàozuò qī-sè huār.
 so call seven-color flower
 So it was called the seven color flower.
- Lǎo bóbo gēn tā shuō shénme?
 old uncle with 3p say what
 What did the old man say to her?
- 19/ CHI: ... [= At this point Jiajia wouldn't continue the story anymore.]

Story Three: A Mother Rabbit and Her Three Babies

(DL 3;3.28)

[DL recited a story about a mother rabbit and her three baby rabbits to her father]

- 1/ CHI Tù māmā yǒu sān-ge háizi.
rabbit mother have three-CL kid
Mother rabbit had three children
- 2/ Yī-ge jiào Hóngyǎnjīng,
one-CL call Red Eye
One was called Red Eye
- 3/ Yī-ge jiào Duǎnwěibā,
one-CL call Short Tail,
One was called Short Tail,
- 4/ Yī-ge jiào Cháng'ěrduo
one-CL call Long Ear
And one was called Long Ear.
- 5/ <En> [/ # en # yǒu yī-tiān,
aham # aham # have one-day
tù māmā dào háizi-men shuō +"/
rabbit mother to kid-PLU say
Aham, one day the mother rabbit said to (her) kids
- 6/ + " Māmā yào dào dǐ-li qù bá luóbo
mummy will to field-in go pull-out radish
Mummy will go into the field to pull out radishes
- 7/ + " Nǐ-men hǎohao kàn jiā
2p-PLU good look look home
So you should look well after the home
- 8/ + " Shéi lái jiào mén, yě bù kāi
who come knock door also not open
Whoever comes knocking at the door, (you) should not open (it)
- 9/ + " Děng māmā huí lái, zài kāi
wait mother return, then open
Wait until mummy has returned home, then (you could) open (it)
- 10/ + " Ø jìzhù le ma?
Ø remember LE Q
(Do you) remember (that) ?
- 11/ + " Ø <jìzhù le> [/ jìzhù le
Ø remember LE LE remember LE
Yes, (we) remembered, (we) remembered
- 12/ Tù māmā shuō wán huà,
rabbit mother say ASP speech
After the mother rabbit has finished the talk,
- 13/ Jiù lǐn-zhe lánzi zǒu le
just carry-ZHE basket walk LE
(She) left carrying a basket
- 14/ Guò le yīhǔr # dàhúiláng lái le
past LE a-while wolf come LE
After a while, the wolf came
- 15/ Dàhúiláng xiǎng ná <ta> [/ tā-men dāng diǎnxīn
wolf want take 3p 3p-PLU as refreshment

chī ne
eat PATL

(The) wolf thought of taking them as refreshments to eat.

- 17/ Nàme xiǎo tùzi <bǎ mén> [I]
then little rabbit BA door
en # bǎ mén guān-de jǐnjǐn-de
aham # BA door shut-DE tight-DE
- So, the little rabbits had tightly locked the door
- 18/ Ø jìn bú qù ya'
Ø enter not go PATL
(He) couldn't get in
- 19/ En # dàhúiláng zuò zài xiǎo tùzi dà ménkǒu
Aham # wolf sit at little rabbit big gate
Aham, the wolf set at the entrance of the little rabbits
- 20/ Ø mǐqǐ yǎnjīng zhèng-zài xiǎng huài zhúyì,
Ø narrow eye ASP think bad idea
(He) narrowed his eyes planning evil things
- 21/ Tūrán Ø kàn-jiàn tù māma huílái le
suddenly Ø see-ASP rabbit mother return LE
Suddenly, (he) saw that the mother rabbit came back
- 22/ Tā liánmáng pǎo dào dà shù hòumàn duō qǐ-lái
3p hurry run to big tree behind hide up-come
He promptly ran after a big tree and hid
- 23/ Tù māma qiāo-le-qiāo mén
rabbit mother knock-LE-knock door
The mother rabbit knocked at the door
- 24/ Mén guān-de jǐnjǐn-de
door shut-DE tight-DE
The door was tightly shut
- 25/ Ø jìn bú qù ya
Ø enter not go YA
(She) couldn't get in
- 26/ Tù māma jù yībiān qiāo mén yībiān chànggē
rabbit mother just simultaneously knock door multaneously sing
(The) mother rabbit then sang while she was knocking at (the) door
- 27/ + Xiǎo tùzi guāguai,
little rabbit wiser
"Little rabbits, obey!"
- 28/ + Bǎ mén kāikāi,
BA door open
Open the door!
- 29/ + Māma yào jìn-lái,
mother want enter-come
Mother wants to come in"
- 30/ Xiǎo tùzi yī-tīng shì māma de shēngyīn
little rabbit one-listen be mother DE voice
As soon as the little rabbits heard their mother's voice,
- 31/ Ø qiǎng-zhe gěi māma kāi mén
Ø rush-ZHE give mother open door
(They) quickly opened the door for their mother

- 32/ Ø qiǎng-zhe bāng māma tí lán.
 Ø rush-ZHE help mother carry basket.
 (They) rushed to help (their) mother carry the basket.
- 33/ He@i # māma bá le zhème duō hóng luóbo
 wow # mother pull-up LE such many red radish
- hufai le.
 return LE
- Wow, Mother had come back with soo many red radishes pulled out.
- 34/ Tù māma qīn-le-qīn Cháng'ěrduo,
 rabbit mother kiss-LE-kiss Long Ear,
 Mother rabbit kissed Long Ear,
- 35/ Ø qīn-le-qīn Duǎnwěiba,
 Ø kiss-LE-kiss Short Tail,
 (She) kissed Short Tail,
- 36/ Ø qīn-le-qīn Hóngyǎnjing,
 Ø kiss-LE-kiss Red Eye,
 (She) kissed Red Eye,
- 37/ Ø kuā tā-men shì hǎo háizi.
 Ø praise 3p-PLU be good kid
 And praised them as being good kids.

Appendix III

Examples of Data

Dandan (1;3.4)

@Begin
 @Participants: CHI Dandan Target_Child, MOT Mother, FAT Father, ADU Guest
 @Age of CHI: 1;3.4
 @Sex of CHI: Female
 @Birth of CHI: 5-APR-86
 @Date: 9-JUL-87
 @Place: Beijing, P.R. China
 @Language: Mandarin Chinese
 @Sum: Many non-interpretable babbling

[...]

*CHI: Ga@b.
 %sit: CHI wants a toy.

*MOT: Aiyou@i.
 %men: uhm
 %eng: Uhm!

*MOT: Zuò lǐtóu.
 %men: sit inside
 %eng: Lay under (the quilt)!

*MOT: Zuò lǐ děng māma.
 %men: sit in wait mother
 %eng: Lay under (the quilt) and wait for mummy!

*MOT: <Wǒ> [//] māma gěi nǐ ná ǒ qù # a -.
 %men: 1p mummy give 2p take ǒ go # PATL
 %eng: I Mummy will go fetch it for you, ok?

*MOT: Guāi.
 %men: obedient
 %eng: Be obedient!

*MOT: Bié dòng a.
 %men: not move PATL
 %eng: Don't move!

*CHI: Wawà@b yā@b.

*MOT: ǒ gànma a -?
 %men: ǒ do-what Q
 %eng: What are you up to?

*MOT: Kuài chuān yī.
 %men: quick put-on clothes
 %eng: Put on your clothes quickly!

*MOT: Bié dòng.
 %men: not move
 %eng: Don't move!

*CHI: Bǎ:-ēn:-ō:-@b.

*CHI: gǒu@b [!].

%men: dog

%eng: Dog!

*CHI: # Ma@b

*CHI: # Ge:ce:li@b

*CHI: # Wǎ:ē:me@b

*CHI: Me: [=: māma] en-.

%men: mummy PATL

%eng: Mummy!

%sit: CHI calls her mummy.

*CHI: Me:ma [:māma] me:ma-: [: māma].

%men: mummy mummy

%eng: Mummy! Mummy!

*CHI: En:@i māma: # mǐ [: mǎ] gé: [: gǒu].

%men: uhm Mummy Mummy dog

%eng: Mummy, Mummy, dog!

*CHI: </Gǒu> [f] </gǒu> [f] //gǒu.

%men: dog dog dog

%eng: Dog, dog, dog!

*MOT: Gǒu.

%men: dog

%eng: Dog.

*CHI: </Gǒu> [f] </gǒu> [f] //gǒu:.

%men: dog dog dog

%eng: Dog, dog, dog!

*CHI: Ba:bǎ:gǎo:ma:da:ma:ba:hao@b

*CHI: Ba:bǒn:ba:bǎo:bǎ:bǒu:bà:ǎo:me@b

*CHI: # Ga:me@b

*CHI: Gaga@b.

*CHI: Bǎ:ba:ba@b

*CHI: # Ba@b

*CHI: Ba@b.

*CHI: Ma:!

%men: mummy

%eng: Mummy.

*CHI: M:ai:-@b

*CHI: # Gǒu.

%men: dog

%eng: Dog.

*CHI: Baba@b.

*CHI: Ei@b

*CHI: A@b.

*MOT: Láii.

%men: come

%eng: Come!

*MOT: You: # láii.

%men: aham come

%eng: Aham, come!

*MOT: Zuò hǎo.

%men: sit good

%eng: Sit still!

*MOT: Mā gěi nǐ chuān kù.

%men: Mummy give 2p put-on trousers

%eng: Mummy will put your trousers on for you.

*MOT: Nǐ shuō kùku.

%men: 2p say trousers

%eng: You say "trousers"

%sit: CHI doesn't say any word and she laughs.

*MOT: Ø gànma ya-?

%men: ø do-what Q

%eng: What are you up to?

*CHI: Dòudou.

%men: bean (?)

%eng: Bean.

*MOT: Kuài lái.

%men: quick come.

%eng: Come, quickly!

*CHI: Gou:@i niēnie [: nǎinai] ne -?

%men: uhm granny Q

%eng: Uhm, (where is) granny?

*CHI: Gou:@i niēnie [: nǎinai] ne -?

%men: uhm granny Q

%eng: Uhm, (where is) granny?

*CHI: Gou:@i niēnie [:nainai] ne -?

%men: uhm granny Q

%eng: Uhm, (where is) granny?

*MOT: Nāinai shuǐjiào ne.
 %men: granny sleep PATL
 %eng: Granny is sleeping.

*CHI: Niēnie [: nāinai] ne?
 %men: granny Q
 %eng: (Where is) granny?

*MOT: Nāinai jiàojiào.
 %men: granny sleep
 %eng: Granny is sleeping.
 [...]
 @End

Mengmeng (1;5.30)

@Begin
 @Participants: CHI Mengmeng Target_Child, GMO Grandmother, ADU Xiao Baomu, FAT father
 @Sex of Age: female
 @Age of CHI: 1;5.30
 @Birth of CHI: 1-Dec-84
 @Date: 31-May-86
 @Place: Beijing, P.R. China
 @Language: Mandarin Chinese

[...]

*GMO: NI gāngcái zài nǎr wár ne?
 %men: 2p a-moment-ago be/at where play Q?
 %eng: Where were you playing a moment ago?

*GMO: Ø zài nǎr wár ne?
 %men: Ø be/at where play Q?
 %eng: Where were you playing?

*CHI: Jiějie pǎo.
 %men: sister run
 %eng: The girls run.
 %com: CHI used to go see through the window the school children next to her home do exercises (e.g., running).

*GMO: Ø kànkàn jiějie pǎo ne # shì-bú-shì ?
 %men: Ø look-look sister run NE be-not-be
 %eng: You watched the girls run, didn't you?

*CHI: Jiějie.
 %men: sister
 %eng: The girls.

*GMO: Jiějie pǎobù # shì ma?
 %men: sister run # be Q
 %eng: The girls are running, aren't they?

*CHI: Jiějie.

%men: sister

%eng: The girls.

*GMO: Jiějie pǎobù shì ma?

%men: sister run be Q

%eng: The girls are running, aren't they?

*CHI: Jiějie pǎobù.

%men: sister run

%eng: The girls run.

*GMO: Nǐ zhǎng dà hòu pǎobù-bù-pǎobù a?

%men: 2p grow big after run-not-run Q

%eng: Will you run when you grow up?

*CHI: Xié diào le.

%men: shoe drop LE

%eng: The shoe came off.

%sit: CHI's shoe came off.

*GMO: A@i # xié diào le.

%men: uhm shoe drop LE

%eng: Uhm, the shoe came off.

*CHI: Xié diào le.

%men: shoe drop LE

%eng: The shoe came off.

*GMO: Měngměng zhǎng dà qù pǎobù ma, pǎo-bù-pǎo?

%men: Měngměng grow big go run Q, run-not-run?

%eng: Will you run when you grow up?

*CHI: Ø pǎo.

%men: Ø run

%eng: I run.

*GMO: Ø pǎo.

%men: Ø run.

%eng: You run.

*GMO: Nǐ yǒu jǐ suì le?

%men: you have/be how-many year LE

%eng: How old are you?

CHI: Wǔ [] suì.

%men: five year

%eng: Five years.

*GMO: A -?

%men: uhm

%eng: Uhm?

CHI: Wǔ [] suì.
 %men: five year
 %eng: Five years.

*GMO: <Yī suì bàn> [!]
 %men: one year half
 %eng: one-and-a-half years.

*CHI: Yī suì bàn.
 %men: one year half
 %eng: one-and-a-half years.

*GMO: Ai@i, nǐ shuō wǒ yī suì bàn.
 %men: hi, you say I one year half
 %eng: hi, you say "I am one-and-a-half years"

*CHI: Wǒ yī suì bàn.
 %men: I one year half
 %eng: I am one-and-a-half years.

[...]
 @End

Maliang (1;10.10)

@Begin

@Participants: CHI Maliang Target_Child, ADU XU Zhengyuan, EXP YE Jun, GMO Da Niang
 @Age of CHI 1;10.10
 @Sex of CHI: Male
 @Birth of CHI: 16-JUL-81
 @Date: 26-MAY-83
 @Place: Beijing, P.R.China
 @Language: Mandarin Chinese

[...]

*EXP: Nǐ bàba kāi shénme chē?
 %men: 2p dad drive what car
 %eng: What kind of car does your dad drive?

*CHI: Jǐpǔchē.
 %men: jeep
 %eng: A jeep.
 %act: CHI is drawing.

*CHI: Ø huà jǐpǔchē.
 %men: Ø draw jeep
 %eng: I draw a jeep.

*CHI: Fān guòlái.
 %men: turn over-come
 %eng: Turn over (to the next page)!

*CHI: Ø huà jǐpǔchē.
 %men: Ø draw jeep
 %eng: I draw a jeep.

- *ADU Zhè shì bú shì jí pǔ chē?
 %men this be-not-be jeep
 %eng Is this a jeep?
- *CHI Shì
 %men be
 %eng Yes.
- *ADU Zhè ge ne?
 %men this-CL Q
 %eng And this?
- *CHI Yī sān líng
 %men one-three-zero
 %eng A one-three-zero
 %com CHI is referring to a type of jeep called *one-three-zero*
- *CHI Ø yào huà ge dà qì chē
 %men Ø want draw CL big car
 %eng I want to draw a big car.
- *ADU Hǎo # wǒ men zài huà
 %men good 1p-PLU again draw
 %eng Good, we draw another one
- *ADU Nǐ zuò guò dà qì chē ma?
 %men 2p sit-ASP big car Q
 %eng Did you ever sit in big cars?
- *CHI Ø zuò guò dà qì chē
 %men Ø sit-ASP big car
 %eng I did sit in big cars
- *ADU Ø dào nǎr qù a?
 %men Ø to where go Q
 %eng Where did you go?
- *CHI Ø dào nàr [*] qù
 %men Ø to there go
 %eng I went there.
- *EXP Nǎr shénme dì fāng?
 %men there what place
 %eng What place is "there"?
- *CHI www
- *EXP Nǐ bàba māma dài nǐ shàng nǎr qù?
 %men 2p father mother carry 2p up where go
 %eng Where did your mom and dad go with you?
- *CHI Ø shàng nàr [*] qù
 %men Ø up there go
 %eng We went there

- *ADU: Maliang bǎ wáwa ná lái gěi wǒ
 %men Maliang BA doll take come give me
 %eng: Maliang fetch the doll for me.
- *ADU: # Maliang bǎ wáwa ná lái gěi wǒ.
 %men: Maliang BA doll take come give me
 %eng: Maliang fetch the doll for me.
- *ADU: # Maliang bǎ wáwa ná lái gěi wǒ.
 %men. Maliang BA doll take come give me
 %eng: Maliang fetch the doll for me
 %com: CHI ignores the ADU's request He wants to go on drawing the jeep
- *CHI Ø huà jǐpūchē
 %men. Ø draw jeep
 %eng I draw a jeep.
 [.]
 @End

Jiajia (2;8.3)

- @Begin
 @Participants: CHI Jiajia Target_Child, EXP Ruifang Min, GMO Grandmother
 @Age of CHI. 2;8.3
 @Sex of CHI. Female
 @Birth of CHI: 27-MAY-85
 @Date 30-JAN-88
 @Place: Beijing, P R China
 @Language: Mandarin Chinese

- [.]
 *CHI Ayí -^
 %men auntie
 %eng: Auntie!
- *EXP: A₁
 %men: yes
 %eng Yes
- *EXP: NI gànma ya -?
 %men 2p do-what Q
 %eng What are you up to ?
- *CHI. Zán-men liǎng dǎ píqú.
 %men: 1p-PLU two hut ball
 %eng: The two of us play ball.
- *EXP: Hǎo ba.
 %men: good PATL
 %eng. alright.
 %sit CHI goes to fetch the ball.
- *EXP: Ø gěi shéi ya -?
 %men: Ø gave who Q
 %eng: Who gets the ball?

*EXP: # NI yào shuō de ø gěi shéi -?
 %men: 2p want say DE ø give who
 %eng: You say, who gets it ?

*EXP: ø gěi nǐ a ?
 %men: ø give 2p Q
 %eng: Do you get it?

*CHI: www
 %act: The ball hit the table so that the toy bricks box fell down to the ground.

*EXP: Hǎo!
 %men: good
 %eng: My goodness!

*CHI: You@i # you@i # wǒ-de-mā-ya -.
 %men: uhm uhm 1p-DE-mother-PATL
 %eng: My goodness!

*EXP: NI bàozhǐ nòng de zěnmeyàng le?
 %men: 2p newspaper make DE how LE
 %eng: What did you do to the newspaper?

*CHI: www
 %sit: noise of CHI's picking up the toy bricks.

*EXP: Ang-?
 %men: Q
 %eng: Uhm -?

*CHI: NI bǎ nà gài-shàng.
 %men: 2p BA that cover-on
 %eng: You cover that!
 %sit: CHI asks EXP to put the cover on the box of toy bricks.

*EXP: Hǎo la.
 %men: good LE
 %eng: It's finished.

*EXP: # Gài hǎo la.
 %men: cover good LE
 %eng: It's well covered.

*CHI: Ø xiān gěi āyí.
 %men: ø first give auntie
 %eng: First give it to auntie.
 %sit: CHI and EXP continue to play with the ball. They take turns to roll the ball over to each other

*EXP: Ø zài gěi Jiājia.
 %men: ø then give Jiajia
 %eng: Then give it to Jiajia.

*EXP: NI yòu yào sǎ la.
 %men: 2p again want flatten LE
 %eng: You are gonna make the toy bricks fall down again.
 %act: CHI again made the toy brick box falling down.

- *EXP Nǐ kàn ø yòu sǎ chū-lái la.
 %men 2p look ø again flatten out-come LE
 %eng You see, they fell again
- *CHI Ayí gěi ø[= me] nòng ø
 %men auntie give ø[= me] make ø[= the toy bricks]
 %eng Auntie fix them for me
- *CHI www
 %sit CHI and EXP pick up the toy bricks
- *EXP ### You@₁ zhè xīn shū shì ma?
 %men uh this new book be Q
 %eng Uh, this is a new book, isn't it?
- *CHI Ø néng kàn ø
 %men ø can look ø
 %eng You can read it
- *CHI Ø néng kàn ø
 %men ø can look ø
 %eng You can read it
- *EXP Ang@₁ # ø néng kàn ø -^
 %men Aham # ø can look ø
 %eng Aham, I can read it
- *EXP Ø tǐng hǎo kàn de
 %men ø very good look DE
 %eng It's very interesting
- *CHI Yīhuǐ lóu-shàng [*] nǎinaì shòu-bù-liao le
 %men a-while upstairs granny bear-not-can LE
 %eng Later, the granny living upstairs cannot stand it
 %com CHI used the term *lóushàng* 'upstairs' instead of *lóuxià* 'downstairs' CHI means the noise of the ball hitting the ground which disturbs the granny living downstairs she is saying this as CHI and EXP are reading the new book, which make it difficult for EXP to figure out what CHI means
- *EXP Shénme?
 %men what
 %eng What?
- *CHI Yīhuǐ lóu-shàng [*] nǎinaì shòu-bù-liao le
 %men a-while upstairs granny bear-not-can LE
 %eng Later, the granny living upstairs cannot stand it.
- *EXP Yīhuǐ lóu-shàng [*] nǎinaì shòu-bù-liao la -?
 %men a-while upstairs granny bear-not-can LE
 %eng Later, the granny living upstairs cannot stand it.
- *EXP Shénme shòu-bù-liao la -?
 %men what bear-not-can LE
 %eng What cannot she stand ?

CHI: Lóu-shàng [] nǎinai.
 %men: upstairs granny
 %eng: The granny living upstairs.

*CHI: Nǐ dǎ qiú,
 %men: 2p hit ball
 %eng: When you play ball,
 %com: CHI explains that the granny cannot stand the noise of the ball.

*CHI: tā shòu-bù-liao la.
 %men: 3p bear-not-can LE
 %eng: she cannot stand it.

*EXP: Wǒ dǎ shénme?
 %men: 1p hit what
 %eng: I hit what?

*EXP: Wǒ zěnmé yòu shòu-bù-liao la?
 %men: 1p why again bear-not-can LE
 %eng: Why cannot I stand it?

*EXP: Wǒ zěnmé yòu shòu-bù-liao la?
 %men: 1p why again bear-not-can LE
 %eng: Why cannot I stand it?

CHI: Lóu-shàng [] nǎinai shòu-bù-liao la.
 %men: upstairs granny bear-not-can LE
 %eng: The granny living upstairs cannot stand it.

*EXP: Ø zěnmé huì shòu-bù-liao la?
 %men: Ø how can bear-not-can LE
 %eng: Why cannot she stand it?

*CHI: Nǐ dǎ píqiú,
 %men: 2p hit ball
 %eng: When you play ball,

*CHI: tā shòu-bù-liao la.
 %men: 3p bear-not-can LE
 %eng: she cannot stand it.

*EXP: Ao-
 %men: ou-yes.
 %eng: ou yes.

*EXP: # Nà zán-men jiù bù dǎ le a -
 %men: # then 1p-PLU just not hit LE PATL
 %eng: Then we will not play ball anymore.

*CHI: En.
 %men: ok
 %eng: ok.

[...]

@End

Duanlian (3;3.15)

@Begin

@Participants: CHI Duanlian (Lianlian) Target_Child, MOT mother, GMO Grandmother, EXP Ruirang Min
 @Age of CHI 3,3 15
 @Sex of CHI Female
 @Birth of CHI 09-OCT-84
 @Date: 24-JAN-88
 @Place: Beijing, P R China
 @Language: Mandarin Chinese

[.]

*MOT: Nĭ gànma ya # Lianlian.

%men: 2p why Q Lianlian

%eng: What are you up to, Lianlian?

%sit: CHI brings some pencils and paper.

*CHI: Wǒ yào huà ge huà.

%men: 1p want draw CL picture

%eng: I want to draw a picture.

*CHI: Ø gěi āyí huà huà ne

%men: Ø give auntie draw picture PATL

%eng: I draw a picture for auntie

*MOT: En # nǐ gěi āyí huà yī huà.

%men: Aham # 2p give auntie draw one picture

%eng: Aham, you draw a picture for auntie

*MOT: Ø gěi nǐ <ge> [//] zhī bǐ.

%men: Ø give 2p CL [//] CL pencil.

%eng: I give you a pencil

*MOT: Qǐ-lái.

%men: get-up.

%eng: Stand up!

*MOT: Ø bǎ <nǐ yéye> [//] nǐ yéye nà zhǐ wǒ le.

%men: Ø BA 2p grandpa 2p grandpa that paper crumple-up LE

%eng: You crumpled up your grandpa's papers.

%act: MOT makes the sheets of paper of CHI's grandpa in order.

*EXP: Nĭ huà shénme huà ya # gěi āyí a -?

%men: 2p draw what picture Q give auntie Q

%eng: What kind of picture are you drawing for auntie?

*MOT: Ø huà shénme huà a ?

%men: Ø draw what picture Q

%eng: What kind of picture are you drawing?

*CHI: Wǒ děi chuān-shàng wàzi le.

%men: 1p should put-on sock LE

%eng: I should put on socks.

*MOT: Ø chuān shénme wàzi a ?

%men: Ø wear what sock Q

%eng: Which socks do you (want to) wear?

*EXP: www

*MOT: Qǐ-lái.

%men: get-up

%eng: Stand up!

*EXP: Bié tuō Ø le.

%men: not take-off Ø LE

%eng: Don't take it off!

%sit: CHI is taking off her pullover.

*EXP: Nǐ lěng bù lěng a-^ # nǐ.

%men: 2p cold not cold Q 2p

%eng: Are you cold?

*CHI: Ø bù lěng.

%men: Ø not cold

%eng: No, I don't.

*CHI: Wǒ bù pà lěng.

%men: 1p not afraid cold

%eng: I am not afraid of the cold.

*MOT: Ø bù lěng

%men: Ø not cold

%eng: You're not cold.

*MOT: Nǐ qǐ-lái shōu qǐ-lái.

%men: 2p up-come collect up-come

%eng: You stand up and pick (your clothes) up.

*MOT: Nǐ huà yī-ge.

%men: 2p draw one-CL

%eng: You draw something.

*CHI: Bù xíng.

%men: not all-right.

%eng: No.

*CHI: # Zhè-ge bǐ bù néng huà.

%men: # this-CL pencil not can draw

%eng: This pencil cannot draw.

*MOT: Nǎ-ge bǐ néng huà?

%men: which-CL pencil can draw

%eng: Which pencil can draw?

*MOT: Zhè-ge ba.

%men: this-CL PATL

%eng: What about this one.

%act: MOT gives CHI another pencil.

*CHI: Zhè-ge tài cháng le.
 %men: this-CL too long LE
 %eng: This one is too long.

*MOT: NI huà yī-ge ba.
 %men: 2p draw one-CL PATL
 %eng: You draw one.

*MOT: Ø huà yī-ge shénme ya ?
 %men: Ø draw one-CL what Q
 %eng: What are you drawing?

*MOT: Zhè shì yī-ge shénme ya ?
 %men: this be one-CL what Q
 %eng: What is this?

*MOT: Zhè shì yī-ge shénme ya ?
 %men: this be one-CL what Q
 %eng: What is this?

*CHI: # Chángbóù.
 %men: # giraffe
 %eng: A giraffe.

*MOT: Ao # zhè shì yī chángbóù a.
 %men: aham this be one giraffe PATL
 %eng: Aham, this is a giraffe.

*CHI: <Nà> [//] # hòumiǎn nà-ge diào le.
 %men: then back that-CL fall LE
 %eng: Then, that one in the back fell.

*MOT: Zhè a -?
 %men: this Q
 %eng: This one?

*CHI: En.
 %men: yes
 %eng: Yes.

*MOT: <Bù shì> [//] # zhè wěiba jiù zhème cháng a-?
 %men: not be. this tail just so long Q
 %eng: No Is this tail only this long?

*CHI: <Zhè> [//] # zhèr.
 %men: this here
 %eng: This....here.

*MOT: A # zhè-ge a?
 %men: Aham this-CL PATL
 %eng: Aham, this one?

*CHI: a.
 %men: yes
 %eng: Yes.

*MOT:	<Dui> [/]	<dui> [/]	dui.
%men:	right	right	right
%eng:	Right.		
[...]			
@End			

Curriculum Vitae

Rui-Fang MIN was born on July 2, 1963 in Zhejiang, People's Republic of China. After completing her secondary education in her hometown in 1981, she studied Psychology at Peking University (*Běijīng Dàxué*) and obtained the degree of Bachelor of Sciences in July 1985. Subsequently, she entered the postgraduate program at the same university, majoring in Psychology, and was awarded the degree of Master of Sciences in July 1988. After being a teaching assistant at the Department of Psychology of Peking University, she continued in Psychology at the University of Tübingen, Germany. From December 1989 on, she obtained a stipend from *Max-Planck-Gesellschaft zur Förderung der Wissenschaften* to do her research at the *Max-Planck-Institut für Psycholinguistik*, Nijmegen, the Netherlands.

