

From Nominal to Pronominal Person Reference in the Early Language of a Mandarin-English Bilingual Child

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1. Introduction

The development of pronouns in first language acquisition has been studied mainly with reference to monolingual children rather than bilingual first language acquirers. However some pronominal development has been described in a number of bilingual first language acquisition studies (De Houwer 1990; Lanza 1997; Meisel 1990, 1994). These studies, which mainly involved European languages, have reported on, and discussed, the emergence of pronominal forms, the order of acquisition, frequency of use of pronominals in each of two language environments and/or crosslinguistic influences in mixed utterances.

The acquisition of the pronominal system has been extensively studied in monolingual L1 research in English and other European languages (Stern, 1900-1918; Huxley, 1970; Clark, 1978; Charney, 1980; Chiat, 1982; Radford, 1995; Rispoli, 1998; Deutsch et al. 2001). However, the transition from nominal person references to pronominal ones in early linguistic development has hardly been reported in the literature. Bilingual L1 pronominal development studies on this issue are also scarce. This study is the first attempt to trace the developmental route from nominal to pronominal reference to person of a Mandarin-English bilingual first language acquirer (age 1;07 to 4;0). Production rather than comprehension is the focus. Its aims are:

- First, the paper aims to investigate the nature of and the route to pronominal person reference by examining the bilingual child's NP system in the early word learning of his two languages in comparison with monolingual counterparts. This is in syntony with Chiat (1986:14) who underscores the importance of looking at the child's NP system as a whole when considering pronoun acquisition.

- The second goal of this paper is to look at the role of the weaker language and the strategy the child adopts in approaching person expressions in his two languages. In this regard Schlyter (1993: 289) suggests that the two languages of bilingual children are not quite in balance during their development. At least for periods of time, one of the languages is weaker. Owing to the fact that the child may have acquired certain linguistic forms in the stronger language, we can also expect him/her to be influenced by these in the acquisition of the weaker, i.e. the later one, and thus transfer these to a second language. Thus, this study may shed some light on whether there is interdependence or interaction in the domain of pronoun form-function mapping from the stronger language to the weaker one.

- The third goal is to contribute to the understanding of the nature and extent of early differentiation in a bilingual child who develops his personal pronoun systems in a pair of typologically distant languages (Mandarin and English) within a language exposure situation different from 'one person, one language' principle. In the field of Bilingual First Language Acquisition (BFLA) current orientation appears to have rejected the Fusion Hypothesis (Volterra and Taeschner 1978) and supports the Differentiation Hypothesis or Separate Development Hypothesis (Meisel, 1989, 2001; Genesee, 1989, 1995; De Houwer, 1990, 2002; Lanza, 1997) in morphosyntactic development. De Houwer (2002, in press) points out that the SDH was originally formulated to apply only to children growing up in families following the 'one person, one language' principle.

2. Person reference: issues and questions

Person identification, in the words of Deutsch et al. (2001:284), is the precondition to socio-emotional attachment and meaningful human social life, and ‘is in place long before the beginnings of language’. However, there appears to be some ‘natural’ difficulties in the acquisition of the linguistic means for the transition to personal deixis (use of pronouns). One difficulty in acquiring the linguistic system of reference to person identified in first language acquisition is that proper names are replaced by pronouns in first and second persons in familiar European languages (Clark, 1978, 1979). This tendency for children’s first references to self to use their own names or nicknames is well documented (see e.g. Tanz, 1980:ch.4 for review; Chiat, 1986). Further difficulties for the pronoun-acquiring child are posed by the shifting reference of speech roles of pronouns (e.g. first person and second person reversal) (Clark, 1978; Chiat, 1986; Oshima-takane, 1999).

2.1 Person reference in Mandarin and English

Substantial differences in the pronominal systems of Mandarin and English are found in their respective morphology, syntax, and semantic/pragmatic functions. Mandarin personal pronoun forms are simpler than their English counterpart. There are no gender, animacy and case contrasts in forms. Further, each person consistently shares the Mandarin phonetic core, and information such as plurality and possessive case are all encoded by one other common morpheme (‘-men’ and ‘-de’, respectively) attached to the stem. The English pronominal paradigm, on the other hand, is more complex. e.g. a common phonetic core cannot be extracted only with scant exceptions (Rispoli, 1994:160). Syntactically, English has obligatory subject and uses coreferential pronouns, while Mandarin is null subject (or pro-drop) and prefers zero anaphora (Li & Tompson, 1981). Pragmatically speaking, Mandarin prefers nouns or ellipsis to pronouns. So, the pronominal input from each of the languages to which the child is exposed is quite different. Table 1 provides an overview of the first person pronoun systems in Mandarin and English, relevant to the current study.

Table 1. Overview of first person pronoun systems in Mandarin and English

Pronoun	Mandarin	English
<i>1st person</i>		
Subject	wo3	I
Object	wo3	me
Possessive (Nominal)	wo3 de	my/mine
<i>1st person plural</i>		
Subject	wo3men	we
Object	wo3men	us
Possessive (Nominal)	wo3men de	our/ours

In bilingual first language acquisition the child is learning to handle the differences between the two linguistic systems simultaneously, so it would be interesting to check whether the intrinsically linguistic difficulties with person reference may be compounded or otherwise vis-à-vis the monolingual acquirer. It may turn out that the simultaneous learning of two linguistic systems has a facilitating role in the transition to personal deixis. The significance of deixis in the acquisition process is that it provides a linguistic mechanism for expressing the domain of joint speaker-hearer attention. This mechanism suggests an extension to naming (Wales, 1986:426). But not much is known as to how this

extension may occur. The discussion so far leads to five research questions, which will be addressed in this study:

1. What is the relationship between the development of the bilingual child's NP system and the emergence of personal pronouns in the course of early word learning of his two languages.
2. How does a bilingual child move from exclusive use of nominal forms for self-reference towards achieving a breakthrough into pronouns?
3. Does the bilingual first language acquirer take the same route and strategy in each of his two languages in mapping the forms of personal pronouns to their functions within each language system?
4. What is the role of the weak language in the process of the personal pronoun acquisition? Is there any effect of interdependent development in this area?
5. Given exposure to two language systems in different contexts, how and when does the child manage to differentiate the two pronominal systems? (Mandarin and English)

3. Methodology

3.1 The informant and input conditions

The informant the present case study, James, is the first-born son of a Mandarin immigrant's family. He was born and brought up in a middle-class family in Sydney, Australia. Both the father and the mother are native speakers of Mandarin and also fluent English speakers. The parents spoke Mandarin to each other at home, but discussed work related issues in English.

James was exposed to Mandarin in the home, where the five family adults around him are speakers of Mandarin varieties. Two of the adults are the child's grandparents who are monolingual speakers of Mandarin varieties. The other three adults i.e. his parents and aunt are also speakers of English outside the family context. Both parents and aunt spoke Mandarin to each other at home but use English fluently at work and in other domains since English is the language of mainstream society in Australia. James was addressed in Mandarin mainly at home. When particular contexts arise, such as English friends' visits, English story-reading time, English media discussion, English chat time and English playtime, the parents and aunt would speak English to the child. Although both parents address the child in Mandarin mainly at home, James was exposed to Mandarin and English regularly from birth. He was born at an English-speaking hospital and obtained English input from the first day on. The mother set a half-hour English TV watching time on children's program and a half-hour story-reading time each day for James. The special parents-James' English-speaking activity time increased with James' growth in age. The mother took James along to an English-speaking mother's group one day a week till James was one year old. The family daily activities such as shopping, outings or visits of neighbors, friends, peers and doctors are all in English. When James was 1;1, his grandmother, a Mandarin speaker, came to Australia and became his day care so that his Mandarin contact increased until he was 2; 8. By then he was sent to an English-speaking long day care two days a week, which became full time day care six months later. The following table illustrated the child's sociolinguistic settings and input conditions.

In this study, the separation of the two languages in James' input is represented in each home or community environment by context-bound language use. In this regard De Houwer (1995: 226) proposes situation-bound factors that are the language use within the child's individual social network. She notes that 'the separation of the two languages by person has received the most attention so far, [but] the separation of the two languages in the input may also be effected by situation-bound factors. To my knowledge there has again been no research investigating the effect of this type of input situation v. others on young bilingual children's language development.' Yet, the latter is the most common situation amongst immigrant communities. In any case one cannot but subscribe the view expressed in Deuchar & Quay (2000: 8) that the prime role is to describe rather than prescribe the natural upbringing of a bilingual child in a normal migrant family environment. In line with this view the present study attempts to investigate the early child bilingual pronominal development as it unfolds in context-bound use of each language.

Table 2. James' sociolinguistic settings and input conditions

Age period	Sociolinguistic settings	Context	Carers	Input	Amount (hrs/day)
0-1;1	Family	Daily routine	Mother Father Auntie	M	5-6
		English TV, story-telling, other outside activities		E	1-2
1;1-2;8	Family	Daily routine	Mother Father Auntie Grandmother	M	6
		English TV, story-telling, English parent meeting, other activities		E	2
2;8-3;2	Family &	Daily routine	Mother Father Auntie Grandmother	M	5
		English TV, story-telling, other activities		E	1.5
	Child care centre	Child care life Teachers & peers		E	2
3;2-4;0	Family &	Daily routine	Mother Father Auntie Grandmother Grandfather	M	3
		English TV, story-telling, chatting, other activities		E	1
	Child care centre	Child care life Teachers & peers		E	5

NOTE: M = Mandarin, E = English.

3.2 The data

The available data consists of 82 audio recordings are available (including three video recordings) from when the child was 1;07 years of age until he was 4;06. However, regular recordings in both language contexts were made from the age of 2;0 up to age 4;06. During this period, recordings were made at least once per fortnight, sometimes twice or more, with the child being addressed in Mandarin, mostly by the mother or the Mandarin-speaking grandmother (who spoke no English), and later with the child being addressed in English, mostly by the father (who spoke mainly English to the child when this helped him understand things) or the mother (who spoke English to the child when telling him a story). The recordings lasted about 40 minutes on average. The main activities during the recording sessions consisted of James playing with his toys, looking at his books with her interlocutor(s), outings, shopping, visiting friends, playing with other children or his younger sister, playing at the English child care center and other daily routines.

It is worth noticing that the informant was not a verbally expressive child so most of the time he prefers to observe and do things rather than talking. During recording time he tends to act naturally so it is no surprise that the corpus, in some of the recordings, is quite small.

The language spoken by the adult interlocutor to the child was taken to define the language context of each recording, so the recordings made with the English-speaking interlocutor were labeled the 'English-context' recordings, and those made with the Mandarin-speaking interlocutor were labeled the 'Mandarin-context' recordings.

3.3 *The diary records*

Diary records were kept by mother and grandmother for Mandarin from the time the child was about six months old till he was six years old. These records were based on observations made when the mother or the grandmother was with the child. The phonetic transcription as well as the context in which the sounds were produced allowed the mother considerable confidence in identifying these sound units. Diary records are used only for clarification and contextual information.

3.4 *Transcription*

A bilingual research assistant, who was familiar with the child's speech habit, transcribed all the 82 recording sessions of speech data. The transcription contains both linguistic and nonlinguistic interactions as well as the relevant contexts. The transcriptions approximate standard orthography. For the Mandarin transcriptions, the Romanized International Phonetic System (Pinyin) is adopted with four tones being represented numerically (1 to 4) so that CONC (the Summer Institute of Linguistics concordancing freeware used) could read and process the text. In cases where the utterance of the child was ambiguous or deviant from adult pronunciation, an approximate phonetic transcription has been given offering possible interpretations. Unintelligible utterances are conventionally transcribed as XX. All unintelligible utterances of the child and of the other speaker(s) have been transcribed. The situational setting and the nonverbal communication have also been noted in the transcriptions whenever such contextual features might be relevant for the interpretation of the child's utterance.

Once a transcript has been completed, it is double-checked by the researcher who is very familiar with different interpretations of the child's utterances. The transcriptions have been entered into computer by common word processing software, using the SIL software (CONC 1.76) to establish database files.

The corpus is divided into six age clusters according to the child's pronominal development. The progression from age 1;07 to 4;06 is seen to move in both languages, in the context of the child's overall syntactic development, through the following phases:

- 1) Nominal person references to others (1;07-2;0);
- 2) Self-referring with nickname (2;0-2;03;16) plus self-referring with both name and nickname (2;04-3;0;07);
- 3) Emergence of first person pronominal reference used together with the other self-referential expressions (3;0;07-4;0);
- 4) Emergence of second person pronominal expressions (3;02;09-3;09;26).
- 5) Emergence of other pronominal expressions (3;09;26-4;06)

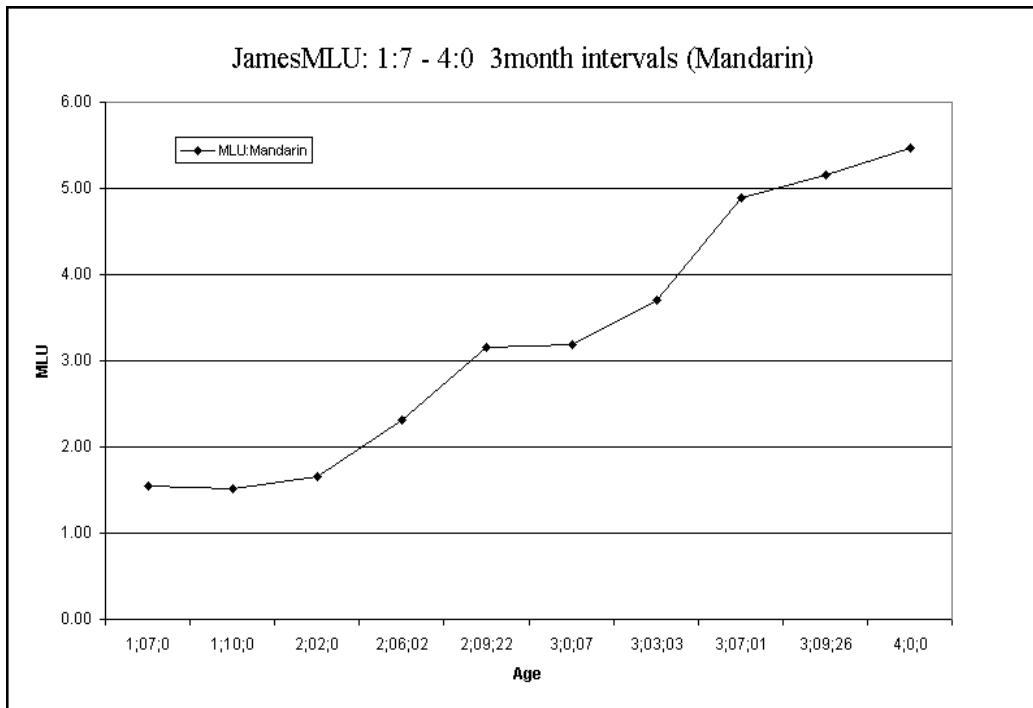
This study will concentrate on the data from 1;07 to 4;0 and phases 1,2,3 since during this period the child is acquiring nominals and progressing from nominals to person-referring pronouns, especially self-referring personal pronouns in his two languages.

3.5 *Measuring dominance: MLUw*

Although MLU (mean length of utterance) was designed initially to measure vocabulary growth only in English (Brown, 1973), many researchers apply MLU to other languages for crosslinguistic comparisons. Since Mandarin is a typologically isolating language I take MLUw (i.e. utterance length on the basis of 'word' rather than 'morpheme') as a possible measure of the child's linguistic

development in each language. Of course this is not without its problems: as De Houwer (1990: 14) points out one cannot, without extensive adaptation, apply MLU to other languages. Meisel (1994:19) also advises using MLU in combination with qualitative analyses. With this in mind, MLU counts for James are presented below in order to obtain at least a rudimentary basis for comparisons with his two languages. I also use age as a measure throughout this study since direct comparability across languages can be obtained with age when studying one child. The calculation of MULw adopts Matthews and Yip (1994)'s criteria regarding what constitutes a word for Chinese.

Figure 1a. James MLUw Mandarin: 1:7 – 4:0 at a three - month interval



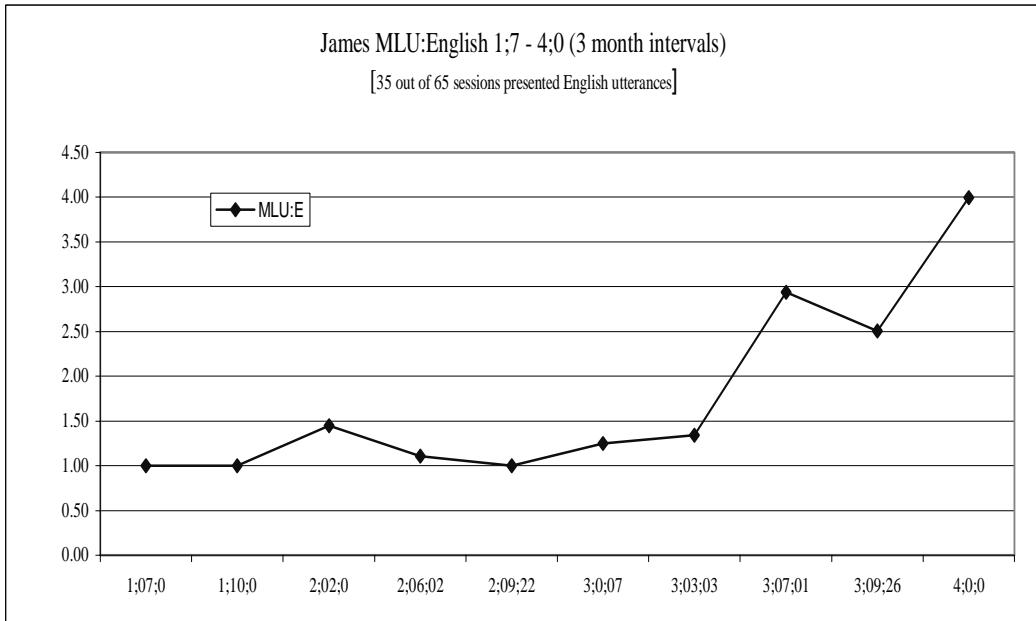
Figures 1a and 1b depict the Mean Length of Utterance in word of the bilingual subject in Mandarin and English from 1;7;0 to 4;0;0. ‘Mixed utterances’ were not problematic as they made up a very small proportion of the total utterances. For example, I found only 1 two-word utterance that could be classified as ‘Mixed’ out of a total of 40 three-word utterances in a Mandarin context from an audio recording when James was 3; 0; 01. In most cases, proper names are the inserted words in the host language frame. Therefore the mixed utterances are excluded from consideration in this study. It appears that James’ Mandarin developed faster than English, especially in the period 1;07;0 to 3;04;0. His Mandarin MLU is 4.0 while English is only 1.5. After age 3;04;0 the English MLU figure increased significantly. By 4;0;0, the gap between the MLU figures of both languages has become narrower. His MLU was 5.49 for Mandarin while his English one was 3.99. After this transition period, the diary data shows that James’ English development accelerated. His two languages became balanced when he reached 5;0;0

Indeed, whereas his development in Mandarin began around the age of 1;7, it was not until the age of 3;4, which coincided with his conversion to a full-time child care stay that his English started to develop rapidly. From then onwards, his production of English in English contexts was more frequent than his production in Mandarin.

Despite the context-based language input, the quantity of input from the two languages is by no means balanced. We have estimated that James was exposed to Mandarin for approximately two thirds of the first three years, whereas English predominated in the remaining fourth year. Given this unequal

pattern of exposure, it is hardly surprising to see that James' development in each of his two languages proceeded at a different pace, particularly at the beginning of our study. James MLU in the two languages suggests that English is his weak language over the time interval 1;07 – 3;07.

Figure 1b. James MLUw English: 1;7 – 4;0 at a three - month interval



4. Results

Phase 1: Null self-referring and kinterms (ages 1;7 to 2;0)

James started talking when he was 1;7. During the period of 1;7 to 2;0, his MLUw in Mandarin is within 1.4 – 1.6 while his English is between 1.0 and 1.5. So both his languages are at one word stage, which corresponds to Brown's stage I (1973:56). James' early vocabulary development at phase 1 reveals that he has no lexicon in either Mandarin or English to refer to himself. The lexical composition of his two languages is strikingly different in type and distribution. Table 2 summarizes his lexical system at that time. The categories used here are a slightly modified version of those in Gentner & Boroditsky (2001, 240). Thus, *nominal terms* are terms referring to concrete objects and entities, including proper names and animate entities; *relational terms* refer to spatial, temporal, or quantity relations – as in 'down', 'later', 'more' – or causal events – 'break'; *modifiers* (e.g. 'pretty', 'big'); *sound effects* (e.g. 'yik-yik'); and words associated with social phrases and *routines* (e.g. 'bye-bye', 'thank-you') complete the inventory.

James had a total identified productive vocabulary of 96 words from ages 1;7 to 2;0. Of this vocabulary, 60.4% (58 Mandarin items) are Mandarin words, 29.6% (38 English items) are English words. Unidentified or indeterminate utterances are excluded from counting. A closer look at the nature of the child's early lexicon in his two languages demonstrates that 50% (17 types, 29 tokens) of his Mandarin and 2.6% (1type, 2 tokens) of his English words are nominals. Pronominal terms have not shown up in his early vocabulary, that is, the first 50 - 100 words in each language.

Table 3: List of early vocabulary in Mandarin and English (James from age 1;7 to 2;0)

	<i>Mandarin</i>	<i>English</i>
N-kinship	10(18)	1(2)
N-proper	0	0
N-animate	4(4)	0
N-collective	1(1)	0
N-object	2(6)	0
Demonstrative	1(2)	0
Relational terms	10(40)	4(6)
Modifiers	2(4)	0
Others	4(4)	0
Pronominals	0	0
Sounds/Routines	24(65)	33(53)
Total Vocabulary	58(144)	38(60)
Total Nominals:		
<i>Mandarin</i> : 17(29) 30%	<i>English</i> : 1(2)	2.6%

Note: Numbers in the table represent the types of words. Numbers in parentheses represent the tokens of words. N stands for nominal.

It seems that the early noun advantage (Gentner & Boroditsky, 2001), which is often reported in first language development, shows up in this bilingual child only in his Mandarin vocabulary while his English vocabulary has different types and proportional distribution. Table 4 provides a list of James' Mandarin nominal composition in comparison to the list of his English nominal and relational terms.

In Mandarin, concrete nouns – especially names for kinships constitute about 59% of the total nominals. The child uses kinship terms to refer to other people, such as '*MaIma. hao3*' (Mum. good). But he has not acquired the necessary lexicon to refer to his own name or nickname. No instance of self-referring occurs in either of his two languages context use. Names for kinships in Mandarin appear to serve as entry-points to referential language. His English lexical system, on the other hand, consists of only 2.6% nominals in the first 50 words produced, compared to 97.3% for relational terms and sounds/routines. Actually there is only one kinship term emerging i.e. '*dad*' (two tokens). Other terms for animate and object entities are not produced. There is no record of any other person referring expressions while the proportion of relational terms and formulaic phrases, as we have seen, is significantly high in his early English. It seems that from very early on his English referential system takes a somewhat a different approach from his Mandarin.

Table 4. List of Mandarin Nominals vs. English Nominal and Relational Terms (James Age 1;7 – 2;0)

<i>Mandarin</i>		Glossary
N-kinship	ba4ba 1 di4di ma1ma 1 mei4mei nai3nai wai4 tai4 shu1shu ye2ye yi2	dad younger brother mum younger sister grandma on father's side grandma on mother's side nanny uncle grandpa auntie
N-animate	niu3 wo1wo 4 ma3 yang1	cow dog horse sheep
N-collective	jia1	home/family
N-object	PP men2	video door
<i>English</i>		
N-Kinship	dad	
Relational terms	good sorry ok no	

Phase 2: Nominal self-referring and other person's referring (ages 2;0 -3;0;07)

English

While James' Mandarin MLUw is at the range of 1.8 and 3.2, which falls within Brown's Stage II and III while his English MLUw is between 1.4 to 1.5, which is within Stage I. In phase 2 James' total vocabulary expands to 347 types of words. Of them 41 are English. Although the types of his English lexicon in productive use are pretty small, this does not hinder him from practicing English to himself and to other English friends. James likes to chant English songs and rhythms and play English games by himself. The formulaic chunks that he used in the above condition are not included in this list. Table 5 provides a list of his English vocabulary.

Table 5. English vocabulary at phase 2 (James from age 2;0 - 3;0;07)

N-location:	1(1)	park
N-object:	6(12)	horse pig sheep dog mins toy
N-proper	5(11)	Joy, Thomas Macdonald Townhall Woolworth
R-quantity	2(7)	more one
Relational	12(25)	naughty pooh yarm yark bi-kiss bye yeh no yes cuddle bi-cuddle weewee
Sound routines:	5(8)	
Others:	10 (17)	
Total vocabulary:	41 (81)	
Total Nominals:	12 (24) 29%	
Total Relational		
Terms:	14 (32) 34%	

Note: N stands for nominal and R for relational.

Compared to phase 1, English nominals at phase 2 have increased from 1 to a total of 12 types. Out of these, 2 are proper names for humans. He used ‘*Joy*’ to call his younger sister when he was 2;07 and ‘*Thomas*’ to refer to his friend. Kinship terms are not used. Names for self-referring are not produced although he understands his English name is *James* since outside the home context he is addressed as *James*. The promininal terms have not emerged yet. Even in the third year the nominal share in his English does not reach 30%. However, if we put the relational terms and formulaic phrases together, these constitute more than 50% of his English lexical repertoire.

In sum, at phase 2 James starts to use English proper names to refer to a non-speaker but he remains in a null self-referring state in production of his English.

Mandarin

James’ Mandarin presents a different picture of his person-referring development. At phase 2, this child’s Mandarin vocabulary increased from 58 to 306 and self-referring forms emerged in his nominal content. The child’s nickname ‘*er2er*’ (‘son-son’), which is used by his grandmother emerged at 2;02 when he uttered ‘*Er2er yao4*’ (Son-son want) in a context where he wanted to have a lolly. ‘*Er2er*’ is mainly associated with his desire or need in a context (52% of tokens). Two months later at 2;04 he

started using his official Chinese name ‘*Auchee*’ to refer to himself while at the same time still using the nickname ‘*Er2er*’ to refer to himself. However, only 8% of its use is related to verb ‘yao’ (want). It is constructed with various verbs and served in three syntactic positions even at its early use, namely in subject, object and possessive ones. It seems that ‘*Auchee*’ is linked with a broader activity and functions as request, descriptive state, claim of ownership and self-identification while the function of ‘*Er2er*’ is more tied up with intimate and personal desires and needs. Table 6 summarizes the form-function mapping of self-reference ‘*Er2er*’ and ‘*Auchee*’.

Table 6. Mandarin Age 2;0 – 3;0;01 Form and function mapping of self – reference and personal pronouns

Form	Age range	Referent	Function	Example (glossary)
Er2er (son-son) [23]	2;02 – 2;11;17	Self as speaker [21] Self as possessor [2]	Volitional (needs/desire)	Yao4 (want) [12] 52%
Auchee (Chinese name) [47]	2;04 – 3;0;01	Self as speaker [44] Possessor [2] Vocative answer [2]	State Claim Self-identification	Yao4 (want) [4] 8%

Note: Words in parentheses represent the English glossary. Numbers in square brackets represent tokens of words.

As for his other person-referring expressions, James addresses other persons mainly in their Chinese kinship terms in both addressee and non-participant contexts: *Malma* (mum), *Ba4ba* (dad), *Mei4mei* (sister), *Di4di* (brother), *Po2* (grandma), *Wai4gong* (grandpa), *Yi2* (auntie), and *Titi* (a friend) are often used. In regard to his personal pronoun development, the Mandarin pronoun forms ‘*wo3*’ (I/me/my), ‘*ni3*’ (you) and ‘*ta1*’ (it/he/she) appear only sporadically and are produced in an imitating way e.g. in greeting routines.

In sum, phase 2 is an important point for James’ self-referring development: he starts to use proper names such as his nickname ‘*Er2er*’ and his Chinese name ‘*Auchee*’ to refer to himself, although he uses kinship terms to refer to others before he can use linguistic meanings to refer to himself.

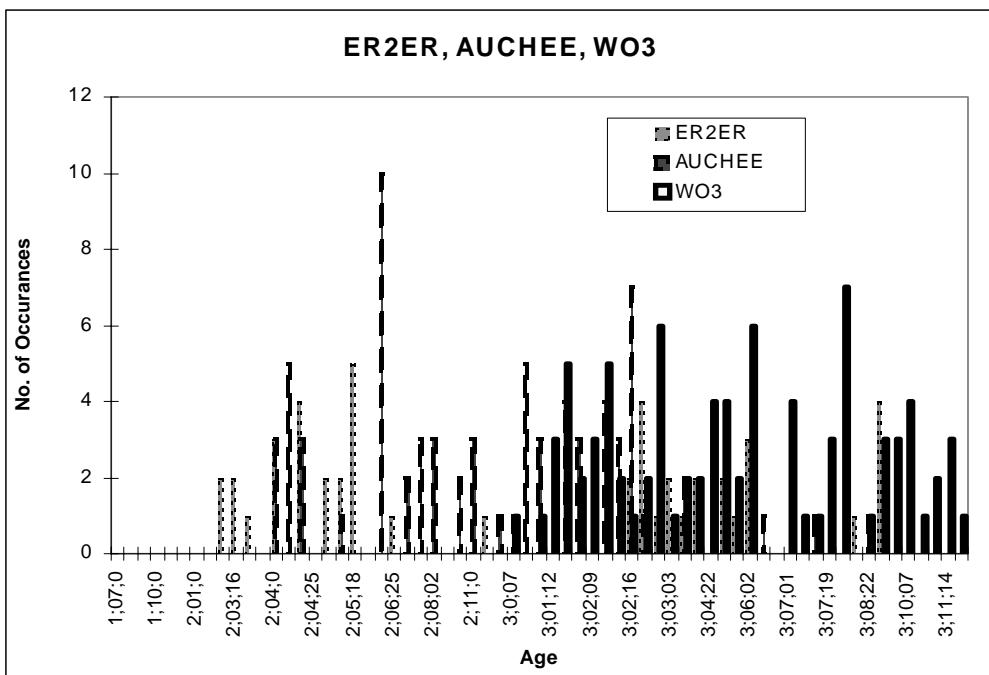
Phase 3: emergence of first person pronominal reference used together with the other self-referential expressions (3;0;07-3;02;09 - 4;0)

This section describes James’ multi-word period in Mandarin and English during which first person pronoun reference in both languages emerge. In Mandarin, James syntactic combinations grow steadily in contrast to his English. At age 3;0;07, James exhibited an average MLUw of 3.20, indicating that he was in Stage IV. Three months later, his MLUw had risen to 4.5, placing him at Brown’s Stage V. At 4;0, his MLUw reached 5.5, that is, beyond Stage V. A noteworthy characteristic of James’ multi-word combinations is that most of them built on his previous two-word types, with the incorporation of an additional element. For example, the two-word combination noun + modifier was then lengthened with an extra element. In English, James went through a period when he only produced single word or formulaic utterances. This lasted from shortly after age 1;7 till he was 3;07;01. At age 3;0;07, James exhibited an average MLUw of 1.4, indicating he was in early Stage I. In the course of the following three months, his MLUw remains the same. But three months later - at 3;07;01, - his MLUw rose to 3.0, moved to Stage II. After that the child’s MULw in English was never less than 2.0, on average. In the course of the following three months his MLUw rose to 3.5, moved to

Stage III. At 4;0, his MULw was 4.0, placing him at Brown's Stage V. In the course of his English syntactic development, rather than producing more relational terms and formulaic phrases at phase 2 James produced unanalysed multi-word combinations, which are originally learned as unanalysed units. At the time, his nominal composition expanded, which contained more than three proper names and kinship terms, compared to phase 2. His nominal productive usage covered similar size of kinship terms including *Mummy*, *Daddy*, *Grandma*, *Baby* and *Joy*. Almost every Mandarin kinship terms he acquired at phase 1 has its equivalent in his English now. But his multi-word combinations appeared not to be built up from individual items already present in their single-word vocabularies. His person pronoun reference in English illustrates this point.

Mandarin. Figure 2 demonstrates that at ages 2;02 to 3;07 James used nominal forms of self-reference like his nickname and proper name when he was a speaker. He broke through the nominal expressions of self-reference with a first person pronoun 'wo3' at age 3;07 when he suddenly uttered *Wo3 chou4* ('I stink') at a time he urgently needed a change of nappy. Ironically his first pronoun emerged out of an emergency situation. From the onset of the first person pronoun *Wo3*, it was used productively and was combined freely with various verbs in a range of constructions. Table 7 presents the form-function mapping of *wo3* at phase 3.

Figure 2. Self-referring and emergence and production of *wo3*
1p (1;07;0 – 4;0;0)



Even after *wo3* emerged, nominal forms of self-reference 'Er2er' and 'Auchee' do not give way. In the period of 3;07;07 and 3;08;22, all three forms co-existed. However, there is some fluctuation of frequency of usage of these three forms. For instance, *Er2er* was not used for 3 months (2;11;17 – 3;02;16) while *Auchee* was intensively used. 'Auchee' phased out one month earlier (at 3;08;22) than 'Er2er' (at 3;09;08). 'Wo3' was finally established as a sole form for self-reference after 3;09;08. Some examples of the process of emergence and acquisition of 'Wo3' functioning as a speaker reference are given in table 7.

Table 7. The Emergence of Mandarin Wo3 (1PS)

Age	Example	Gloss	Function
3;0;07	“Wo3 chou4”	I stink	Speaker
3;01;01	“Wo3 shi4...”	I am ...	Speaker
3;01;11	“Wo3 wan2 yi1 xia4”	I play a while	Speaker
3;01;16	“Wo3 bu2 hui4 chuan1”	I don’t know how to put on	Speaker

Note: 1PS stands for first person pronoun singular form.

English. Table 8 illustrates the emergence of English first pronoun forms. Nearly every form experienced a period of formulaic usage. All these forms have their roots in unanalysed phrases. Which seems to support Pine & Lieven (1993: 567)’s finding that the acquisition of unanalysed phrases is facilitative in the transition from single- to multi-word speech. For example, the appearance of ‘my’ was situated in the pattern ‘My name is X’. Such an example reflect a process whereby a phrase is initially segmented as a unit, but is subsequently reanalysed as result of regularities perceived by the child in other similar words or phrases, resulting in a flexible lexically defined formula which can be extended to similar situations.

Table 8: The Emergence of English Mine, Me, I and My

1 PS ¹	Age	Example	
mine	3;0;14	M: “Don’t play” A: “ <i>mine. mine</i> ”	
	3;07;03	A: “It’s- <i>mine. lolly.</i> ” “It’s- <i>mine. Don’t touch.</i> ”	
	4;0;15	A: “This is not <i>mine. Mine</i> in garage”	
me	3;05;20	A: “Quse- <i>me. Quse- me</i> ”	
	3;06;25	A: “ <i>Mine, don’t touch-me</i> ”. (his lolly) R: “You should say ‘don’t touch <i>it</i> ’” A: “don’t touch”.	
I	3;05; 05	A: “how- <i>I-wanna</i> what-you-are...” A: “ <i>I</i> ’m a teapot...”	
	3;06;02	A: “ <i>I</i> want toilet”	
my	3;06;09	A: “What’s your name? <i>My</i> name is James” Z: “What’s mei4mei’s name?” A: “ <i>My</i> name is Joy.” Z: “What’s daddy’s name?” A: “ <i>My</i> name is Zhang Yun”. Z: “What’s mum’s name?” A: “ <i>My</i> name is mummy.”	
		4;03;08	A: “Look, <i>my</i> book. <i>My</i> book fall down.”

¹ Note: 1PS stands for first person pronoun singular form.

James used English kinship terms and proper name to refer to other persons, e.g. *Mummy, Daddy, Grandma, Baby and Joy* except himself, which is totally different from his approach to Mandarin self-reference.

In sum, James starts nominal forms for self-reference in Mandarin, whereas his English begins with a pronoun. He never uses his own names to refer to himself in English although he already understood his English name *James* when he was 2;0.

5. Discussion

By tracing the development of the bilingual child's early lexical systems, it seems that the early noun advantage (Gentner & Boroditsky, 2001) does show up in this bilingual child but only in Mandarin while his English vocabulary has significantly different types and proportional distribution.

An early predominance of names for objects and individuals and a later increase in the proportion of relational terms is well reported for the acquisition of English L1 (Woodward & Markman, 1989). Nouns predominate also in early comprehension as well as production (Macnamara, 1972; Nelson, 1973; and others). A recent study by Gentner & Boroditsky (2001) on a division of dominance continuum concludes that the claim of an early noun advantage holds up well cross-linguistically.

Their review indicates a strong early noun advantage even in languages with verb-friendly input characteristics such as Mandarin. This Mandarin-English bilingual child study suggests that James' stronger language, Mandarin, develops like a normal first language in monolingual children with an early noun advantage. Concrete nouns - especially names for kin, constitute 30% of the total early vocabulary. They appear to serve as entry-points to referential language. However, as noted above, this noun advantage phenomenon does not exist in his weaker language English.

His English lexical system consists of only 2.6% nominals in the first 50 words produced. Even in the third year the nominal share in English does not reach 30%. However, if we put the relational terms and formulaic phrases together, these constitute more than 50% of his English lexical repertoire. This 'division of labour' between the two language systems indicates two principal routes in James' early lexical development: one of which follows referential words (this happens with Mandarin), the other follows context-bound and social-pragmatic words (English). This demonstrates that the child may utilize two different internal representations when he first begins to acquire words in each of the two languages, which may be grouped as "event representations" and "prototypes" following Barrett (1989, 1995).

James MLU in the two languages and his lexical make-up in each of the language suggest that English is his weak language over the time interval 1;07 - 3;07. This coincides with the crucial time for his development of personal pronouns in each language. How does the weak language, then, achieve entry into pronominal reference? Is there any interdependent relationship between the two languages in this area?

At 2;02, the child starts referring to himself by his own nickname and refers to other persons by their kin terms. However, at that time, the child has no person nouns as resources to refer to persons in English. How does the child start referring to persons in English? Which approach or strategy does he adopt?

As documented in L1 literature, first person singular pronoun emerges in Chinese children sometime before 2;0 with appropriate use by 2;8 - 2;10 (Erbaugh, 1992; Xu & Min, 1992). Parallel pronominal forms emerge, in English L1 children, at about 1;6 - 2;0 (Brown, 1973) with mastery by 2;10 (Oshima-Takane, 1992). The similarities in the development of personal pronouns in the Mandarin and English (monolingual) L1 acquisition are remarkable: time and order of emergence, and even the route to the acquisition of personal pronouns. Clearly, the formally simpler Mandarin pronominal system does not appear to accelerate, or delay, pronoun emergence.

James' pronominal development appears to follow clearly distinct routes in his two languages. In Mandarin he follows a self-referring path using his nickname and own name, then using them together with first person pronoun singular form *wo*3. The present study shows that in bilingual L1 acquisition pronominal first and second person reference emerge significantly (about one year) later. Further, while

the tendency for children's to use their own names or nicknames in their first references to self (well documented for European languages (Tanz, 1980; Chiat, 1986; Deutch, 2001) and also reported for Chinese (Tseng, 1987) in my data it appears only in one of the languages, Mandarin. On the other hand in English James appears to skip this nominal self and other person-referring stage. At emergence he cuts directly, and categorically, into the use of English personal pronouns (mine, me, I, my) without errors. For instance, with regard to pronoun case, there is not a single instance in my English data of an accusative pronoun being inappropriately used as the sentence subject, which is in fact one of the characteristics of the early (monolingual English) patterned speech period (Radford, 1986:20). The child demonstrates consistent, adult-like case-marking contrasts with "I - me - mine".

Thus it seems that he adopts different approaches or strategies to the two languages' personal reference: an analytic approach in Mandarin but a synthetic approach in English.

6. Conclusion

The systematic analysis of developmental routes and changes in the contexts in which the child produces both correct and incorrect pronouns as well as proper names reveals how the child who, initially, has difficulty in using personal pronouns eventually masters their correct usage. It may provide insights into the theoretical understanding of the mechanisms by which children learn personal pronouns. It also contributes to the understanding of the role of the weak language in bilingual children. For instance, the bilingual child might attempt a different strategy to utilize the limited resources at stake to achieve a target-like production in that weak language.

It seems that the formal simplicity of the Mandarin pronominal system does not appear to accelerate the emergence of pronouns while the more complex English pronominal forms do not hinder acquisition, either interdependent developmental effects are not evident. The error-free development of the English pronoun forms, e.g. the case distinction of mine, me, my, I, seems to support Meisel's hypothesis (1990: 18) that bilinguals tend to focus more on formal aspects of language and are therefore able to acquire certain grammatical construction faster and with fewer errors than many or most monolinguals. In addition, individual differences in approaching certain aspects of language may play a role as well, such that children who pay more attention to forms and accuracy will make fewer formal errors in production.

The data also shows that the child seemed to acquire pronominal systems in a language-dependent manner from early production on (1;07). He appeared to follow an analytic route for Mandarin and a synthetic route for his English pronoun development.

Thus I believe that this research sheds some light on how the child builds up language representations for the two language systems as well as the complexity of a child's early development of form-function mapping in two languages when growing up in a bilingual context.

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