



Bilingual Child Language Acquisition

双语儿童的语言习得

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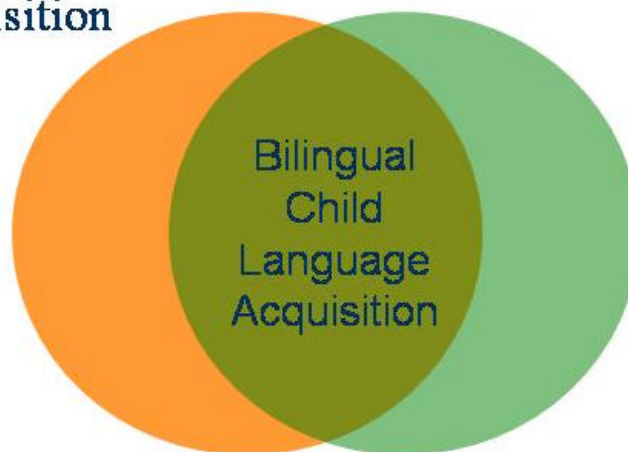
Outline 纲要

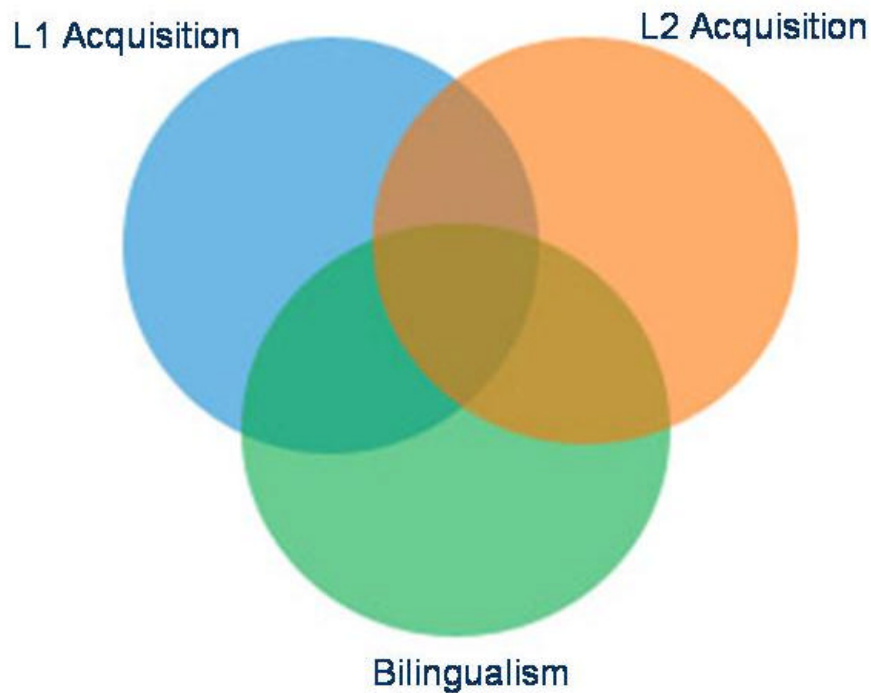
- Introducing the field of bilingual child language acquisition
- The Hong Kong Bilingual Child Language Corpus
- Phonological differentiation between Cantonese and English in a bilingual child at age one
- Transfer and interaction in syntax: development of Cantonese dative constructions in monolingual and bilingual children
- Conclusions

De Houwer (1998)

Child Language
Acquisition

Bilingualism





The bilingual instinct 双语本能

- Language is a human instinct, children are born with an innate capacity to acquire language without conscious effort or formal instruction. (Pinker 1994)
- It is simply human, and totally natural, for the bilingual child to acquire both languages in response to the dual input in their environment.

Null Hypothesis for Bilingual Child Language Acquisition 儿童习得双语的零假说

Null hypothesis 零假说:

- The same language instinct that underlies the acquisition of one first language also underlies the acquisition of two first languages.
- 支持习得一个第一语言的语言本能，同样支持习得两个第一语言的语言知识

Paradis & Genesee (1996)

- Bilingual children have their input space divided, so their frequency of exposure to each language at any given time is smaller than that of monolinguals acquiring each language.
- 双语儿童的语言输入空间是分成两半的。在相同的时间内，双语儿童要习得两个语言，单语儿童只须习得一个语言，因此双语儿童比单语儿童接触每个语言的时间自然减少。

dominant language 优势语言

- When the input is less than balanced, one of the two languages develops faster or shows greater complexity at a give age. This language is said be dominant.
- 当双语输入无法趋向平衡时，在特定年龄内，其中一个语言会发展得比较快或比较複雜，该语言名为「优势语言」。

Child Second Language Acquisition

- Acquisition by individuals young enough to be within the critical period, but with a first language already in place (Foster-Cohen 1999)
- Successive/sequential acquisition of two languages in childhood (McLaughlin 1978)

Bilingual First Language Acquisition

- Simultaneous acquisition of two (or more) languages in childhood, usually from birth.
- The child begins exposure to two languages in the first month of life (De Houwer 1995)
- The child's exposure to two languages begins in the first year of life (Deuchar and Quay 2000)

Controversial issues

- To what extent is the difference between the bilingual child's dominant and non-dominant languages of a similar magnitude to that between a first and second language in early child L2 acquisition?
- How far apart do the bilingual child's two simultaneously developing languages have to be in terms of age of first exposure and rate of development before one can consider them first and second languages?

Yip, Matthews and Huang (2001)

Hong Kong Bilingual Child Language Corpus

香港雙語兒童語料庫



The Hong Kong Bilingual Child Language Corpus 香港雙語兒童語料庫

- subjects exposed to Cantonese-English from birth in one parent-one language families
- longitudinal data for four subjects (1;05-4;06) available
- total of 233 tagged files in 2 languages
- multimedia features: transcripts linked to digitalised audio and video files

Hong Kong Bilingual Child Language Corpus 香港双语儿童语料库

Project website:

[http://www.cuhk.edu.hk/ils/home/
bilingual.htm](http://www.cuhk.edu.hk/ils/home/bilingual.htm)

Corpus available at CHILDES (Child
Language Data Exchange System)
archive: <http://chilides.psy.cmu.edu>

Subject Information

Subjects (Name)	Native language of parents		Age span during study
	Mother	Father	
Timmy	Cantonese	English	1;05.20-3;06.25
Kathryn	English	Cantonese	2;09.23-4;06.07
Llywelyn	Cantonese	English	1;06.00-3;05.28
Sophie	Cantonese	English	1;06.00-4;00.00
Charlotte	Cantonese	English	1;05.10-3;06.14

Two systems or one?

- Do bilingual children go through an initial one-system phase combining elements of two or more systems before they keep the systems separate?

Two systems in, one system out

- Volterra and Taeschner (1978) proposed the most detailed and influential one system theory for early bilingual development.
- Recent studies overwhelmingly favor the two separate systems hypothesis in early stages of development (Genesee 1989, Meisel 1989, 2001, De Houwer 1990, Genesee et al. 1995)

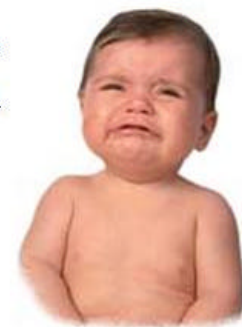
Early perceptual differentiation

Bosch & Sebastián-Gallés (2001)

- 4 month old bilingual infants able to differentiate two languages (Spanish-Catalan) in perceptual task.
- No delay to discriminative ability in bilinguals.

More evidence for differentiation

- Bilingual infants babble in a dominant language at 9-13 months, e.g. French-type babbling in bilinguals with French mothers.
- Word orders and morphosyntax in bilinguals acquiring different language pairs reflect structural properties and constraints on grammatical operations specific to each of the two languages.



Syllable-final stops in Cantonese and English

<u>Cantonese</u>	<u>English</u>
sap1 濕 [səp ˧]	sap [sæp]
sat1 失 [sət ˧]	sat [sæt]
sak1 塞 [sək ˧]	sack [sæk]

optionally released vs. obligatorily unreleased stops

Cantonese: stops obligatorily unreleased

[-released]	[+released]
[pət ˧] 'pen'	* [pətʰ]
[pək ˧] 'north'	* [pəkʰ]

English: stops optionally released

[-released]		[+released]
put [pʰʊt ˧]	or	[pʰʊtʰ]
book [bʊk ˧]	or	[bʊkʰ]

Development of syllable-final stops: diary data from Timmy

- Cantonese unreleased stops

Mother: zoek3 mat6 aa3.

wear sock PRT

'Let's put your socks on.'

Child: maa6-mat6...mat6-mat6. [mætɿ]

sock-sock sock-sock (1;3)

Timmy: [kəkɿ] (1;05;07, target = [kœkɿ])

Syllable-final stops: English

- Unreleased stops at 1;4

Bike [baɪkɿ] (1;04;11)

Book [bʊkɿ] (1;04;25)

- Hyper-released stops at 1;07

[ma:w-ma:w, k^hæt^h]

cat - cat

Early phonological development in Alicia

- CV syllable structure at 10-14 months

ze4ze1 [tsɛ:tsɛ:] 'big sister'
de1-de1 [tɛ:tɛ:] 'Daddy'
bo1-bo1 [pɔ:pɔ:] 'balloon'
po4-po2 [pʰɔ:pʰɔ:] 'Grandma'
or [pɔ:pɔ:]



Syllable-final stops in Alicia

First use of unreleased stops in Cantonese

mit1 'pinch', maat3 'wipe' (1;00)
zeok3-zeok3 'wear' (1;00;16)
jit6 'hot' (1;01;10)

音系区分

Phonological differentiation

Mom: Alicia, bat1jyu4 lei5 daai3 ngo5 heoi3

Alicia 不如 你 帶 我 去

tai2 rabbit aa1, hou2-mou2 aa3?

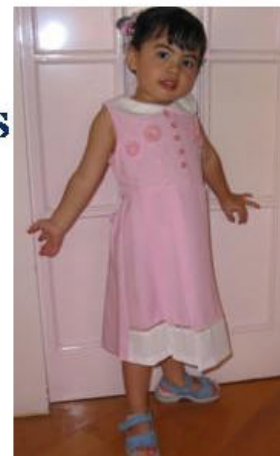
睇 rabbit 呀, 好 冇 呀?

[How about taking me to see the rabbit, okay?]

Child: rabbit (1;01.03) [note released final t]

Evidence for differentiation

- Single system would predict free alternation in both languages, allowing released stops in Cantonese and unreleased stops in English.
- Overly strong release maximizes the contrast between unreleased stops in Cantonese and released stops in English.



Yip & Matthews (2003) argue for early phonological differentiation

- The bilingual children's two phonological systems are differentiated throughout the period of study (0;10 – 1;09)
- Strongly aspirated and affricated final stops in two siblings provide evidence for hyper-differentiation.

Transfer and interaction in bilingual development (Yip & Matthews 2000)

Transfer from Cantonese to English

- *wh*-interrogatives
- null objects
- relative clauses

English *wh*-in-situ interrogatives

Both Timmy and Sophie passed through a stage whereby *wh*-phrases are not fronted, following Cantonese grammar:

CHI: This on the what (Timmy 2;04)

CHI: You go to the what? [in the car, asking Daddy] This what colour? (2;10)

CHI: I know, I know, I know, I know, I know
it's *where*. (Sophie 3;03.18)

Null objects 零宾语 in English

Timmy: You get, I eat...

[father takes chocolates off shelf]
(2;02;03)

Sophie: Don't break!

[cautions the adult not to break a
toy cup] (3;06.06)

Pre-nominal relative clauses in English 前置式关系从句 (Matthews & Yip 2003)

CHI: Where's [the Santa Claus give me [the gun]]? [i.e. the gun Santa Claus gave me]
(Timmy 2;07;05)

CHI: [[Timmy take] [that one]], I want.

Father: Which one do you want?

CHI: [[She take][that one]].

[[Timmy take][that one]]. (Sophie 3;03;12)

Cross-linguistic influence in the other direction: from English to Cantonese

Transfer from English to Cantonese (?)

- bei2 俾 double object construction
[V Recipient Theme]
- postverbal prepositional phrase
[V (NP) PP]

e.g. 我食咗嘢[喺屋企]

Possible influence of English word order on Cantonese

Bei2 keoi5 zyu1gwu1lik1 laa1 (Timmy 2;07;13)

俾 佢 朱古力 喇

give him/her chocolate PRT

"Give her some chocolate."

Je4sou1 bei2 ngo5 cin2 aa3 (Sophie 2;05;02)

耶穌 俾 我 錢 呀

Jesus give me money PRT'

"Jesus gave me money."

bei2 俾 'give' - part I

Subject: Sophie

Age: 2;05.02



- *CHI: Je4sou1 bei2 (ngo5 cin2 aa3) .¹
 %can: 耶穌俾我錢呀.¹
 *BEL: Je4sou1 bei2 cin2 lei5 aa4 . .
 %can: 耶穌俾錢你呀.¹
 *CHI: hai6 aa3 .¹
 %can: 係呀.
 *BEL: dim2gaa2 aa3 , gei2 si4 aa3 . . .¹
 %can: 點解呀. 幾時呀.
 *CHI: jat1 dim2zung1 aa3 .¹
 %can: 一點鐘.
 *BEL: Je4sou1 jat1 dim2zung1 bei2 cin2 lei5 ?
 %can: 耶穌一點鐘俾錢你?
 *CHI: hai6 aa3 .
 %can: 係呀.¹
 *BEL: m4 hai6 gwaa3 - . .¹
 %can: 唔係啱.¹
 *CHI: lei5 m4 hai6 gwaa3 aa3 .
 %can: 你唔係啱呀.
 *BEL: m4 hai6 gwaa3 , Je4sou1 jat1 dim2zung1 bei2 cin2 lei5 ?
 %can: 唔係啱呀, 耶穌一點鐘俾錢你?
 *BEL: mou5 lei5jau4 .
 %can: 無理由.
 *BEL: hou2 geng1 o1 .
 %can: 好驚㗎.

bei2 俾 'give'

- part II

Subject: Sophie

Age: 2;05.02



- *BEL: bin1go3 bei2 cin2, bin1go3 bei2 cin2 lei5 aa3 ?
%can: 邊個 俾錢, 邊個 俾錢 你呀?
*CHI: hai6 (ng)jo3 aa3.
%can: 係我呀.
*BEL: bin1go3 bei2 cin2 lei5 aa3 ?
%can: 邊個 俾錢 你呀?
*CHI: hai6 Je4sou1 bei2 (ng)jo5 cin2 .
%can: 係耶穌 俾我錢.
*BEL: m4 hai6 gwaa3 - : .
%can: 唔係啱.
*CHI: lei5 m4 hai6 gwaa3 aa3 . ⊥
%can: 你唔係啱呀.
*BEL: hou2 geng1 aa3 . ⊥
%can: 好驚呀.
*BEL: lei5 gin3 gwo3 Je4sou1 laa4 - . .
%can: 你見過耶穌喎.

The *bei2* 俾 double object construction

- *Bei2* 俾 is the only Cantonese verb that occurs in [V-T-R] canonical order.
- The order [V-R-T] also occurs in adult Cantonese as a variant order where it is motivated by the length of the theme or other factors:
我 俾 [你] [幾千蚊同埋一張機票]
Ngo5 bei2 [lei5][gei2 cin1 man1 tung4maai4 jat1 zoeng1 geilpiu3]
“I give you a few thousand dollars plus an air ticket.”

Full Datives in Yip et al's Bilingual Corpus

Subject	Timmy	Sophie	Kathryn	Llywelyn	Charlotte	Total
Age Range	2;01.22- 3;06.25	1;06.1- 3;0.09	3;01.05- 4;06.07	2;00.12- 3;04.17	1;08.28- 3;00.03	
No. of Can. files	34	40	26	17	19	136
No. of child utterance	9,749	11,024	6,323	3,831	4,012	34,939
<i>bei</i> 2-R-T	8(80%)	18(95%)	5(71%)	4(80%)	0	35(85%)
<i>bei</i> 2-T-R	2(20%)	1(5%)	2(29%)	1(20%)	0	6(15%)
Total no. of full datives	10	19	7	5	0	41

Full Datives in Lee et al (1996)'s Monolingual Corpus

Subject	CCC	CKT	CGK	HHC	LTF	LLY	MHZ	WBH	Total
Age Range	1;10.8 - 2;10.27	1;05.22 - 2;07.02	1;11.01 - 2;09.09	2;04.08 - 3;04.14	2;02.10 - 3;02.18	2;08.10 - 3;08.09	1;07.00 - 2;08.06	2;03.23 - 3;04.08	
No. of files	22	25	19	16	16	20	26	27	171
No. of child utterances	11,412	13,985	5,553	10,975	9,332	9,743	8,118	5,558	74,676
<i>bei</i> 2-R-T	0	0	9 (69%)	1(100%)	4 (50%)	6(60%)	0	1(100%)	20(63%)
<i>bei</i> 2-T-R	0	0	4 (31%)	0	4 (50%)	4(40%)	0	0	12(38%)

Age of first emergence of *bei2* full datives in bilingual children

Subject	Timmy	Sophie	Kathryn	Llywelyn	Charlotte
<i>bei2</i> -R-T	2;07;14	2;03;24	3;03;16	2;09;07	N/A
<i>bei2</i> -T-R	2;04.28	2;08;00	3;03;16	2;10.04	N/A

- *bei2*-R-T is attested earlier than or at the same time as *bei2*-T-R in 3 of the 4 bilingual children
- later incidental recordings and diary data show that Timmy and Sophie still produced *bei2*-R-T at age 5 and beyond.

Age of first emergence of *bei2* full datives in monolingual children

Subject	CGK	HHC	LTF	LLY	WBH
<i>bei2</i> -R-T	2;03;11	2;10;13	2;03;30	2;11;01	2;09;19
<i>bei2</i> -T-R	2;03;11	N/A	2;07.20	3;02.06	N/A

- *bei2*-R-T is attested earlier than *bei2*-T-R in 4 of the 5 children who produced at least 1 full dative; both forms emerge together in one child.

Bilingual corpus findings

- The non-target [*bei2*-R-T] order far outnumbered the target [*bei2*-T-R] order in the corpus data of our four Cantonese-English bilingual children: overall distribution of non-target vs target full datives is 83% vs. 17%.
- The nontarget [V-R-T] order emerges earlier in terms of age of acquisition and tends to persist for a long time.

Monolingual corpus findings (Chan 2003)

- Full *bei2*-datives in the target [V-T-R] order are generally very few before age three among the 8 monolingual children in CANCELP (Lee et al. 1996).
- Overall the distribution of nontarget vs target full datives is 63% vs. 38%.
- None of the 8 monolingual subjects use the target [V-T-R] order when they first start to express the two objects together.

Marked status of [V-T-R] word order

- Typologically, [V-T-R] construction is a marked order in languages without morphological case (Matthews and Leung 2002)
- [V-T-R] double object forms are attested in a small number of languages: Cantonese, some other Chinese dialects (Liu, 2001); Thai and other Tai languages; Ewe in West Africa (Essegbey, 2002).

Marked status of [V-T-R] word order

- Kozinsky and Polinsky (1993) proposed a tentative universal: in *Agent-before-Patient* languages, the recipient precedes the theme [V-R-T]; and in *Patient-before-Agent* languages, the theme precedes the recipient [V-T-R].
- Since *Patient-before-Agent* languages are few, the [V-T-R] order can be considered a cross-linguistically marked option and is predicted to be especially unusual to occur in an *Agent-before-Patient* language.

Unmarked status of V-R-T order

- Animacy: recipient (animate) before theme (inanimate)
- Pronominal recipients, being light in terms of length are strongly preferred to appear before lexical theme NPs.
- More languages favor [V-R-T] order cross-linguistically.

Pronoun vs. lexical NP in Cantonese double object constructions

- No pronominal theme in Cantonese
Ngo5 bei2 [bun2 syul] [go2 go3 hok6saang1]
我俾[本書][嗰個學生]
- * Ngo5 bei2 [keoi5] go2 go3 hok6saang1
*我俾[佢][嗰個學生] 我俾[本書][佢]
- pronouns are not generally used for inanimate referents in Chinese
我鍾意嗰架車 → *我鍾意佢

Vulnerable domain in bilingual acquisition

- Input ambiguity: the input invites the hypothesis that [V R T] is applicable to Cantonese as well as to English.

In a broad sense: Where to put the Recipient?

The recipient immediately follows the verb in a wide range of environments in Cantonese:

null theme

俾我

[_{TOPIC}∅]_i[∅]俾[x]_i我

↑ _____|

topicalised theme

本書俾我

[本書]_i[∅]俾[x]_i[我]

↑ _____|

Input ambiguity

- The ambiguity can also be stated in a narrow sense: both [V-T-R] and [V-R-T] are attested in the Cantonese input, even though the [V-R-T] option is relatively rare.
- The ambiguity in the Cantonese input opens the door for English influence. The invariant English [V-R-T] order boosts Cantonese [V-R-T] order as one of the possible orders sanctioned by the grammar.

Conclusions 结论

- Bilingual child language acquisition raises issues of a similar nature to second language acquisition.
儿童双语习得与第二语言习得具有类似的特点。
- Phonological differentiation happens early, by around 1;0.
双语儿童的音系区分在一歲左右已經開始。
- Bilingual children's two linguistic systems may interact with each other with transfer in both directions.
双语儿童的两个语言系统存在跨语言互动並有双向的转移。

Conclusions 结论

- Bilingual children produce [bei R T] more frequently than [bei T R] and the non-target forms persist for a longer period than their monolingual counterparts.
双语儿童的[俾 R T] 句式频率比单语儿童較高, 持续时间較长。
- A number of factors conspire to make Cantonese [bei-T-R] constructions a vulnerable domain:
 - typologically marked status of [V-T-R] order
 - input ambiguity favors the [V-R-T] order which coincides with English syntax, which in turn boosts this order.

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