# Reflexive Pronouns in Chinese-Learning Monolingual, Bilingual, and Trilingual Toddlers, and Their Parental Input

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# Background

Reflexive pronouns in Chinese have two forms:

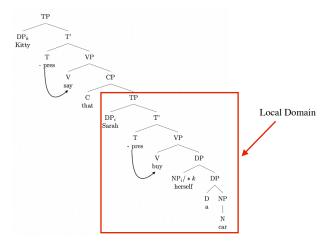
- **Compound reflexives** (e.g., *ta-ziji* 'himself' in Mandarin) governed by binding principles in ways similar to reflexives in English.
- Bare reflexives (e.g., ziji in Mandarin, zi6gei2 in Cantonese) functioning as local anaphors, generic pronouns or intensifiers [6] (examples in Data Annotation).
- English-speaking children use reflexive pronouns as a generic pronoun
  in addition to anaphorical and logophorical use before age 7 [7, 1],
  Mandarin children exhibit a fundamental grasp of the local and
  long-distance (LD) function of bare reflexive around age 4 [4].

# Binding Principle A

#### Binding Principle A: Anaphor

- The reflexive in English is captured by Binding Principle A.
- **Definition**: Anaphor must be bound in their binding domain or their governing category. In another words, the binding domain of an anaphor is the smallest TP containing anaphor and an antecedent which c-commands the anaphor [2].
- A reflexive is an anaphor that coindexed with an NP that c-commands the anaphor in the same binding domain.

# Binding Principle A Example



• In this sentence "Kitty saw that Sarah bought herself a car," the anaphor "herself" must refer back to "Sarah," who is the antecedent c-commands the anaphor in the binding domain.

## The properties of ziji

- The Chinese bare reflexive ziji is challenging the Binding Principle A.
- it can be bound by a non-local and non-c-commanding antecedent (Long Distantly or LD bound) as well as locally bound[3].

# Ziji Binding Example

Zhangsani renwei Lisij zhidao Wangwuk xihuan zijii/j/k Zhangsan think Lisi know Wangwu like self 'Zhangsani thinks that Lisij knows that Wangwuk likes himselfi/j/k.'

Table: Ziji Binding Example

- There are three potential antecedents for ziji:
  - The local subject: Wangwu
  - The intermediate subject: Lisi
  - The matrix subject: Zhangsan.

## Examples of different forms of reflexive In Mandarin

There are three different types of reflexive in Mandarin Chinese that are influenced by syntactical or discourse properties[6]:

- Anaphor: reflexives obeying Binding Principle A
   erzi, hai meng-jian le ziji, zai gen pengyou-men wan son also dream-see ASP self PROG with friend-PL play
   'The son also dreamed about him(self) playing with friends.' (Parental input, 2;9)
- Generic Pronoun: reflexives used as personal pronouns
   ziji shua ya
   self brush teeth
   'Brush (my) teeth by myself.' (Amy, 2;3, Trilingual)
- Intensifier: reflexives emphasized through discourse or prosody
   ni xiang ziji du
   you want self read
   'You want to read by yourself.' (Eason, 2;0, Monolingual Mandarin)

### Research Questions

- What types of reflexive pronouns are notably absent or more prominently used by children learning Chinese (Mandarin or Cantonese)?
- How do parental input and cross-linguistic influence affect the absence of reflexive pronouns among these children?

#### Data Set

- 367 instances of reflexive pronouns produced by monolingual (n=17), bilingual (n=23) and trilingual (n=9) toddlers (total n=49) and their parents in naturalistic adult-child play sessions
- Extracted from Early Additive Child Multilingual Corpus [5]
- Sampled longitudinally over 1.5 years (1;6-3;0)

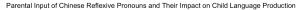
#### Data Annotation

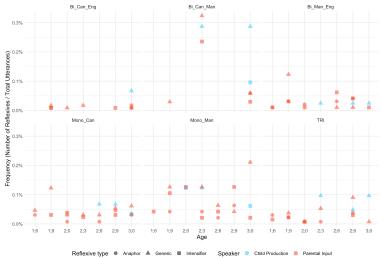
A total of **367** utterances containing reflexive pronouns were selected (332 utterances from parental input and 35 utterances from child production) and categorized into **3** main groups:

#### Examples of different forms of reflexive In Mandarin

- Anaphor:
  - Parental Input Frequency: 0.607% across all groups
  - Child Production Frequency: 0% (none of the children produced anaphorical ziji)
- Generic Pronoun:
  - Parental Input Frequency: 1.749% across all groups
  - Child Production Frequency: 1.248% across all groups
- Intensifier:
  - Parental Input Frequency: 1.146% across all groups
  - Child Production Frequency: 0.31% across all groups

#### Results



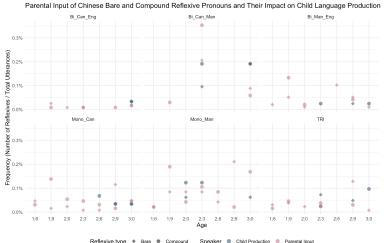


#### Results

- Early emergence of bare reflexive around 2;0 from a monolingual Mandarin-speaking children.
- Anaphorical use of reflexive pronouns missing across all groups, consistent with low dosages of anaphorical use in parental input (0.03%).
- Generic use of reflexive pronouns dominates the use of bare reflexives across groups (0.08%) aligning with patterns reported for English children.
- Intensifier use of reflexive pronouns (specific to the Chinese languages; not found in English) is only present in the monolingual and bilingual children who are learning Cantonese, Mandarin or both, and absent from children who are acquiring English alongside one of two of the Chinese languages, suggesting effects of multilingual input and cross-linguistic influence on the production of reflexives in the early years.

#### Results

 Early emergence of bare reflexive "ziji" and compound reflexive "wo-ziji" (e.g., myself) by age two among monolingual Mandarin learning children.



#### Conclusion

- This study investigated the acquisition of reflexive pronouns in Mandarin and Cantonese among young children, uncovering an early emergence of bare reflexives by age two.
- Findings indicate a lack of anaphoric use, reflecting minimal parental usage, while generic use predominated, similar to trends in English-speaking children [7, 1].
- Notably, the use of reflexives as intensifiers was prominent in monolingual and bilingual children, emphasizing the role of multilingual settings in linguistic development.
- These insights highlight the critical influence of language exposure and cross-linguistic interactions on early language acquisition in bilingual and multilingual contexts.

#### References

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