

Investigating children’s acquisition of Mandarin *you* ‘again’ with goal-PPs*

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1. Introduction

The adverb ‘again’ in many languages is ambiguous between what are called the repetitive and restitutive readings when it modifies a change-of-state predicate (see von Stechow 1995, 1996, Beck and Johnson 2004, among others). The difference between these two readings lies in the presupposition: the repetitive reading presupposes a prior event of the same kind, whereas the restitutive reading only presupposes that the result state of the event held before. We illustrate these two readings using (1), where *again* modifies a goal-PP, by which we mean the combination of a manner-of-motion verb (e.g. *walk*) and a PP indicating location/path (e.g. *to the village*).

- (1) John walked to the village again.
- a. *repetitive*: John had walked to the village before.
 - b. *restitutive*: John had been at the village before (e.g., he was born at the village).

Beck and Snyder (2001) and Beck (2005) reported that the availability of restitutive ‘again’ with a change-of-state predicate varies both cross-linguistically (English vs. French goal-PPs, see (1) and (2), where ‘again’ is expressed in French by *de nouveau*) and language internally (French goal-PPs vs. lexical accomplishments, see (2) and (3)).

- (2) Jean a marché de nouveau au village
Jean has walked of new to-the village
‘Jean walked to the village again.’ (repetitive, *restitutive) (Beck 2005:47, ex. 17)

*The experimental findings, which were the focus of the NELS talk, have since been published elsewhere. Therefore, this paper will focus on some more recent work that builds directly on those findings. The title has also been changed slightly to better reflect the content of the paper. We are grateful for the valuable feedback we received from reviewers and audiences at AC 2022 and NELS 53. We would also like to thank Xueyan Liu, Xinyao Li, Ruixin Ni, Li-Chen Chuang, Yijie Zheng and Shiyang Wu for their help with the corpora annotation. This work was supported by the National Social Science Fund of China (22BYY076).

- (3) Sally a ouvert de nouveau la porte.
 Sally has opened of new the door
 ‘Sally opened the door again.’ (repetitive, restitutive) (Beck 2005:47, ex. 17)

This raises an acquisition puzzle: For each change-of-state construction (e.g., goal-PPs, lexical accomplishments), how do children determine if ‘again’ can be restitutive? To address this puzzle, Xu and Snyder (2017) examined English-learning children’s acquisition of restitutive *again* with goal-PPs. They found good performance on the comprehension of restitutive *again* with English goal-PPs by age 4-5, despite extreme scarcity of direct evidence: In a sample of more than 100,000 child-directed utterances, unambiguously restitutive uses of *again* with goal-PPs were entirely absent. Xu/Snyder proposed English-learning children deduce the availability of restitutive ‘again’ from the syntax of English goal-PPs and a basic, repetitive meaning for *again*.

In this study, we examined children’s acquisition of restitutive *you* (very roughly, ‘again’) in Mandarin Chinese, which is more complex compared with English restitutive *again*. Like English *again*, Mandarin *you* permits both repetitive and restitutive readings when it modifies a change-of-state predicate, such as a goal-PP (4).

- (4) Zhangsan you zou dao le na-ge cunzi.
 Zhangsan YOU walk reach PERF that-CL village
 ‘Zhangsan walked to the village again.’ (repetitive, restitutive)

However, *you* differs from *again* in that it always precedes the predicate. In addition to the word order difference, Mandarin *you* also differs from English *again* in that it has multiple meanings. Alongside repetition and restitution, it permits other readings, such as temporal continuation (5a), addition (5b), and rhetorical readings (5c).

- (5) a. Ta xi-wan yifu you qu zuo fan.
 He wash-finish clothes YOU go cook meal
 ‘He did the laundry, and then cooked meals.’
 b. Ta congming you qinfen.
 He clever YOU hard-working
 ‘He’s clever and hard-working.’
 c. Ta you bu shi laohu, bu yong pa ta.
 He YOU not be tiger not need afraid him
 ‘He’s not a tiger. You need not be afraid of him.’

The differences between Mandarin *you* and English *again* give rise to the issue of how *you*’s restitutive interpretation is derived and how it is acquired. Using the same methodology and similar materials as Xu and Snyder (2017), Xu et al. (2022) tested Mandarin-acquiring children of the same age range. Their experimental results showed that like their English-learning peers, Mandarin-learning preschoolers can successfully understand restitutive *you* with goal-PPs, giving rise to the question of how Mandarin-learning children

to a preceding motion event from the village to the source (see Patel-Grosz and Beck 2019 for more details on how to conceptualize a counterdirectional predicate). As a result, the participant must have been at the village before, hence the restitutive reading.

3. Relying on direct evidence?

In the process of acquiring restitutive *you* with goal-PPs, the Fabricius-Hansen-style analysis requires direct evidence of unambiguously restitutive ‘again’ with a goal-PP (i.e., a manner of motion verb followed by a PP indicating location or path). It is important to note that this direct evidence should be limited to goal-PPs instead of all change-of-state predicates, because in languages like French restitutive ‘again’ is unavailable with a goal-PP (2) even though it is available with a lexical accomplishment verb (3). This means that knowing her language allows restitutive ‘again’ with a change-of-state predicate does not necessarily tell the learner that restitutive ‘again’ is possible with a goal-PP. Additionally, the direct evidence should not include all directed motion predicates modified by *you*, such as those in (8).

- (8) a. Zhangsan you lai le beijing.
 Zhangsan YOU come PERF Beijing
 ‘Zhangsan came to Beijing again.’
 b. Zhangsan you lai dao le beijing.
 Zhangsan YOU come reach PERF Beijing
 ‘Zhangsan came to Beijing again.’
 c. Zhangsan you dao beijing lai le.
 Zhangsan YOU reach Beijing come PERF
 ‘Zhangsan came to Beijing again.’

This is because in some languages (e.g. French), restitutive ‘again’ is available with a directed motion verb such as ‘return’ (9), yet unavailable with goal-PPs (2). This contrast suggests that knowing restitutive ‘again’ is available with a directed motion predicate is not enough to tell the learner that restitutive ‘again’ is possible with a goal-PP.

- (9) Le chiot est revenu de nouveau à la maison.
 The puppy is return of new to the house
 ‘The puppy returned to the house again.’ (repetitive, restitutive)

Does children’s input actually contain such direct evidence (i.e. unambiguously restitutive *you* with a goal-PP)? To answer this question, we conducted a corpus study and assessed how often children are exposed to parental uses of goal-PPs modified by *you* that describe situations where only the restitutive reading is true. Specifically, we examined the children’s input in two longitudinal CHILDES corpora for children acquiring Mandarin (Deng and Yip 2018, Zhang and Zhou 2009, MacWhinney 2000). Details of the analyzed corpora are presented in Table 1.

Acquisition of Mandarin you ‘again’ with goal-PPs

Table 1: Analyzed Mandarin corpora

Child	Corpus	Age span	No. of transcripts	Total adult utterances
Tong (M)	Tong	01;07;18-03;04;09	22	21,709
Xuexue (F)	Zhou3	01;01;08-03;02;00	30	15,625

We searched for all adult utterances that contained both *you* and a directional item (*shang* ‘up’, *xia* ‘down’, *jin* ‘in’, *chu* ‘out’, *guo* ‘across’, *lai* ‘come’, *qu* ‘go’, *cong* ‘from’, *dao* ‘to’, *wang* ‘toward’, *hui* ‘return’, or *qi* ‘rise’), and then extracted all sentences in which *you* modifies a goal-PP.

We annotated the interpretations of *you* (repetitive, restitutive, other). All relevant utterances were first coded independently by two annotators. In addition to the preceding text and up to 50 lines of following text, the coders also relied on the linked audio/video files if they are available. For utterances in which the annotators disagreed, the coders discussed the annotations together with two other research assistants, and all reported results thereafter were based on the annotations reached after discussion. We excluded from our analysis ungrammatical or weird uses of *you*, as well as fragmentary or incomplete utterances with *you* for which we were unable to determine the usage from context. Remaining utterances for which agreement could not be reached were treated as ambiguous.

It should be noted that we came across in our analysis one exceptional example shown in (10), which included a PP and a manner-of-motion verb *walk*. We excluded this example from our count because it is distinct from a goal-PP in the following respects: First of all, the PP *wang hui* ‘backward’ precedes the verb and has been analyzed as an adjunct instead of a complement (e.g. Lamarre 2013). Second, only path information is encoded and the eventual location is not specified.

- (10) [Context: The mother and child left their home and went outside. The father stated that he would join them shortly.]
 MOT: Ta yao deng baba, suoyi wo you wang hui zou.
 mother: he want wait dad so I YOU toward back walk
 ‘Mother: He(=The child) wanted to wait for his dad, so I walked back again.’
 (Tong Corpus, File 010919, Line 1705)

The results are summarized in Table 2. In total we found two cases where *you* modifies a goal-PP, as in (11-12).

Table 2: Goal-PP utterances with *you* in children’s input

	meaning of <i>you</i>	Tong	Xuexue
unambiguous	repetitive	1	0
	restitutive	0	0
	other	0	0
ambiguous	repetitive/low restitutive	1	0

- (11) [Context: The plane had flown up to the sky earlier.]
MOT: You fei dao tian shang qu le.
mother: YOU fly to sky on go PERF
'Mother: The plane flew into the sky again.'
(Tong Corpus, File 020906, Line 3663: repetitive)
- (12) [Context: The grandparents were having a conversation with the child, who was pretending to drive a train. They were discussing where the child would like to go. Despite already being in Hengyang, he expressed their desire to go to Hengyang to play. Later on, the child repeated their wish to go to Hengyang.]
GRA: You pao dao Hengyang lai le.
grandma: YOU run to Hengyang come PERF
'Grandma: You ran to Hengyang again.'
(Tong Corpus, File 020719, Line 798: ambiguous)³

Crucially, out of 37,334 utterances across our samples, there were no occurrences of *you* modifying a goal-PP where the restitutive reading was unambiguously intended. This result suggests that the direct evidence that learners need appears to be extremely rare (if not unavailable), calling into question the idea that children can safely rely on direct evidence to tell them their target language allows the restitutive reading with goal-PPs.

4. Relying on indirect evidence?

An alternative explanation for Mandarin-speaking preschoolers' successful comprehension of restitutive *you* with goal-PPs is that children rely on indirect evidence, which is closely related to the structural analysis of restitutive *you*. Under the structural analysis proposed by Liu (2021, to appear), *you* receives a restitutive reading when it is base-adjoined to a result-denoting constituent (à la von Stechow 1996, Beck and Johnson 2004). In addition, the adverb can be generated low, move to a pre-verbal surface position, and later reconstruct. This analysis means learners will get the restitutive reading for free, once they know (A) the syntax of the change-of-state predicate, in our case the goal-PP construction; (B) the repetitive reading of *you*; and (C) the fact that Mandarin *you* has the property of "looking inside" a complex predicate. We examine each of these prerequisites in turn.

As found in Xu et al.'s experiment, the syntax of goal-PPs (Prerequisite A) is acquired fairly early. With respect to how it is acquired, readers can refer to Xu and Snyder (2017) for a proposal about how this might result from the child's setting a macro-parameter (TCP) based on another, more frequent structure in child-directed speech.

³This sentence was coded as 'ambiguous' because it could be interpreted in two ways. On one hand, the grandmother might be recounting how the child had mentioned twice his desire to go to Hengyang, which would be a repetitive reading. On the other hand, it could also be compatible with a restitutive reading, as suggested by the grandmother's subsequent line 'You left from Shenzhen and came to Hengyang again?', indicating that they had returned to Hengyang.

Acquisition of Mandarin *you* ‘again’ with goal-PPs

Earlier experimental findings suggest that children have acquired the repetitive reading of *you* (Prerequisite B) by age 3;06 (see Liu 2009, 2015, Liu et al. 2011). We propose that children can learn this meaning from parents’ uses of repetitive *you* in the input. To examine whether this proposal is on the right track, we tallied all adults’ uses of *you* for the same two children we previously examined, following the coding schema described in Section 3.⁴ In addition, following Nissenbaum (2006), during annotation we made a distinction between two types of restitutive readings, as exemplified in (13). The low restitutive reading, which presupposes that the result state of a change-of-state predicate held before, is what we have been focusing on. The high restitutive reading, on the other hand, triggers an agentless presupposition in the sense that the subject of the predicate is not included in the presupposition of “again” (see Bale 2007, Smith and Yu 2022, Zhang 2022). In other words, the action represented by the predicate is repeated but with a different agent.

- (13) John opened the door again.
- a. *High restitutive*: Someone other than John had opened the door before.
 - b. *Low restitutive*: The door had been open before (e.g., it was built open).

The annotation results are summarized in Table 3.⁵ As shown in the row labeled “unambiguous repetitive” in the data, a significant portion of adults’ total usage of *you* corresponds to the repetitive reading. This observation indicates that there is substantial evidence for Prerequisite B in the input that children are exposed to.

Table 3: All adult uses of *you* in child-directed speech

	meaning of <i>you</i>	Tong	Xuexue
unambiguous	repetitive	94	65
	high restitutive	0	4
	low restitutive	9	4
	other	49	48
ambiguous		14	5
total		166	126

How do children figure out that *you* can be interpreted as if it modifies a sub-constituent (Prerequisite C)? According to the structural analysis of restitutive *you*, (C) can be learned from various sources. First, evidence does not need to come from goal-PPs, but can also come from restitutive *you* with other change-of-state predicates. Table 3 (in the row labeled “unambiguous low restitutive”) shows that such evidence is attested in both children’s input. Secondly, evidence supporting Prerequisite C is not solely restricted to low restitutive

⁴It remains inconclusive how many different meanings of *you* independently exist in Mandarin Chinese. In our annotation, we closely followed the classification of *you*’s different usage proposed by Lü (1999) and focused on the readings that are relevant to our research question: repetitive and restitutive.

⁵The category “other” includes temporal continuation (see (5a)), addition (see (5b)), and rhetorical (see (5c)) readings as well as other tonal and non-adverbial uses (see Lü 1999 for more detail).

readings but can also be found in instances of high restitutive readings. We have identified a few cases of such readings in Xuexue’s input.

We propose that relevant evidence for supporting Prerequisite (C) also includes examples such as (14) and (15), which suggest that *you* has the ability to “skip” certain restructuring verbs and adjuncts and be interpreted as if it modifies a sub-constituent, as first observed by (Liu 2021, to appear). Example (14) exhibits multiple interpretations: Apart from the so-called “matrix repetitive” reading, where it is presupposed that Xiaoming had previously wanted to close the door (14a), it can also trigger the presupposition that Xiaoming had closed the door before (14b). Under this reading, it appears that *you* can bypass the restructuring verb and be interpreted as if it directly modifies the complement of “want”. The so-called “embedded restitutive” reading (14c) further supports this “skipping” capacity. Example (15) is also ambiguous. Importantly, the sentence can be felicitous in all the contexts presented in (15a)-(15c). In other words, as long as there exists a prior event in which Xiaoming met Xiaohong, it does not matter whether the meeting happened on Tuesday or at the park. These types of examples further demonstrate that *you* can be interpreted as if it modifies a sub-constituent.

- (14) Xiaoming you xiang guanshang na-shan men.
 Xiaoming again want close that-CL door
 ‘Xiaoming wants to close that door.’
- a. Matrix repetitive: ‘Xiaoming wanted to closed that door before.’
 - b. Embedded repetitive: ‘Xiaoming closed that door before.’
 - c. Embedded restitutive: ‘The door was in a state of being closed before.’
- (Liu to appear:ex. 5)
- (15) Xiaoming you zai Xingqi’er zai gongyuan yudao le Xiaohong.
 Xiaoming again at Tuesday at park meet PERF Xiaohong
 ‘Xiaoming met Xiaohong again at the park on a Tuesday.’
- a. Context 1: Last week, Xiaoming met Xiaohong at the park on a Tuesday.
 - b. Context 2: Last week, Xiaoming met Xiaohong at the park on a Monday.
 - c. Context 3: Last week, Xiaoming met Xiaohong at school on a Monday.
- (Liu to appear:ex. 13-14)

We examined all adult uses of *you* in the same two corpora to explore whether there exists evidence of such a skipping effect. We found a few clear cases for Tong (n=1) and Xuexue (n=2), as exemplified in (16).

- (16) [Context: The child poked her mother’s eye before.]
 MOT: You chadian chuo dao wo de yanjing
 mother: YOU almost poke reach I POSS eye
 ‘Mother: You almost poked my eyes again.’
- (Zhou3 corpus: File 000326, Line 1422)

5. General discussion and conclusion

Comparing the lexical and structural analyses of restitutive *you*, the former requires the learner to rely on direct evidence, specifically instances of *you* with goal-PPs in unambiguously restitutive contexts. However, our corpus study suggests that such evidence is extremely rare in child-directed Mandarin. The scarcity of this direct evidence raises doubts about a lexical analysis that heavily relies on it.

On the other hand, the structural analysis of restitutive *you* offers a more promising explanation. It means that once learners grasp three key aspects: (A) the syntax of goal-PP, (B) the repetitive reading of *you*, and (C) the ability of *you* to be interpreted as modifying a sub-constituent, they naturally acquire the restitutive reading without requiring specific instances of *you* with goal-PPs. Through our corpus analysis, we show that this structural analysis allows for more general evidence and more potential sources for children to rely on. Consequently it provides a better explanation of how children acquire restitutive *you* with goal-PPs.

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