Acquisition of Mandarin Chinese by Early-Stage Immersion Learners: A Case Study

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Abstract

To date there have not been many studies that examine how Mandarin is acquired in an immersion setting. In this study we examine how early-stage immersion learners of Mandarin acquire a grammatical structure— the *ba* construction. This is a frequently used structure in Mandarin that has a non-canonical SOV word order, an order for which English has no counterpart. Taking a qualitative approach, we collected learner utterances over a 4-month period. It was found that the learners did not like to deviate from the canonical SVO word order and it was difficult for them to produce the *ba* construction. However, when they did use the construction, their utterances satisfied a complex predicate constraint that is imposed on the construction, suggesting that the learners have knowledge of the constraint. Above all, immersion young learners have a grammar of their own.

Their language development offers a new window into

bilingual language acquisition.

1. Introduction

In recent years Mandarin Chinese immersion programs in the US have grown rapidly. They are among the fastest growing educational programs in the US (Asia Society, 2012). According to Mandarin Immersion Parents Council, between 2003 and 2018 the number of Mandarin immersion programs in the US has grown 20 times, from 13 to 264. (For additional information, see https://miparentscouncil.org/full-mandarin-immersion-school-list/). This dramatic expansion not only attests to the success of Mandarin immersion programs, it also underscores the increasing awareness of the benefit of bilingual education. However, to date research on these programs has been limited. Of the research that has been conducted on Mandarin immersion, the issues that have been investigated include learners' academic and linguistic performance (Fortune & Song, 2016; Jacobson, 2013), pedagogy (C. Wang, 2014; T. Wang, 2008; Yao, 2016; Zhou, 2013), and learner and parent attitude and motivation (Bodey, 2016; Tang, 1988). As

far as we know, there has been no study on how immersion learners acquire Mandarin grammatical structures or the learning process they go through. Does L1 transfer, which plays an important role in adult L2 acquisition, have an influence on young immersion learners? If so, in what way? How does teacher talk shape learner grammar? These basic questions await answers.

In this study we report a case study on Mandarin immersion learners at the elementary level at a Mandarin immersion school in the U.S. Our purpose is to find out how learners in the immersion program acquire grammatical structures. For this study, we will examine learners' use of one grammatical construction in Mandarin, the *ba* construction. This is a construction that does not exist in English; it has a word order, SOV, that is different from the SVO canonical word order of Mandarin. Learning a new construction requires learning its structure and the contexts where it is used. How do immersion learners handle the task? This is an issue we will be concerned with.

We adopt a cognitive linguistic approach to language
learning. This is a usage-based approach where "all linguistic
units are abstracted from language use. The acquisition of
grammar is the piecemeal of many thousands of
constructions and the frequency-based abstractions of
regularities within them" (Ellis, 2002, p. 144). Following Ellis
(2002, 2006a, 2006b), we assume that learners' success with
an L2 construction depends on the nature and extent of the
language input and learners' experience with it. Ellis (2006b)
considers language acquisition "the gathering of information
about the relative frequencies of form-function mappings" (p.
1). Whether a construction is easy or difficult to acquire
depends on the accessibility and availability of the language
input. To explore the role of the input, we use a qualitative
method; in particular, we rely on speech productions of the
learners and the teacher that were collected in class during a
four-month period.

1. The *ba* construction

The *ba* construction is a unique structure in Mandarin with a non-canonical word order. It is used in spoken as well as written language. In this construction, the object that normally occurs after the verb occurs pre-verbally, marked by *ba*, creating a Subject-Object-Verb word order. This is illustrated in (1). (1a) illustrates a sentence in the canonical SVO word order, while (1b) is a *ba* sentence with the SOV word order.

> (1) a. Wǒ xiě - hǎo zuòyè   le.
>
>   I   write-finish homework   PRT
>
>   'I finished the homework.'

> b. Wǒ bǎ zuòyè   xiě - hǎo le.
>
>   I   BA homework write-finish PRT
>
>   'I finished the homework.'

The SOV order with *ba* is not always possible; its availability depends on verb type and the type of NP that serves as the object of *ba*. The verb is telic or perfective, and

the *ba* object is definite or specific (Li & Thompson, 1981; Liu, 1997). In terms of form, the predicate almost always carries some material in addition to the verb, e.g., a resultative phrase or a prepositional phrase. In (1), the predicate contains a resultative compound verb. There has been abundant literature on the *ba* construction since as early as Wang (1945); as a result, we now have a good understanding of its syntactic, semantic, and functional characteristics. Semantically, the construction exhibits high transitivity (Hopper & Thompson; 1980; Sun, 1995; Thompson, 1973); it often expresses the causative meaning (Sybesma, 1992) and it also expresses a bounded event (Liu, 1997). As for how the construction is used in discourse, it is shown that the *ba* construction is often used when the *ba* NP carries old information (Liu, 2007).

For language learners, perhaps the most difficult feature is that the use of the *ba* construction depends on structural as well as discourse factors (Xu, 2012). Certain

predicate types, e.g., when a predicate includes a prepositional

phrase, require the use of *ba*, illustrated in (2):

(2) a. *Tā   fang   shū   zài   zhuōshang.

       he   put   book   at   table-on

       'He put the book on the table.'

   b. Tā bǎ   shū   fang   zài   zhuōshang.

       he BA   book   put   at   table-on

       'He put the book on the table.'

When *ba* is optional as in (1), where (1a) varies with

(1b), whether *ba* is preferred in a context will depend on

information structure—when the *ba* NP carries old

information, *ba* is preferred. The structural and discourse

factors of *ba*, together with the non-canonical SOV word

order, makes the *ba* construction a challenging construction

for language learners.

In L2 acquisition studies, the *ba* construction has been known to be a structure which is difficult for learners to acquire. There have been many studies on L2 acquisition of the *ba* construction, focusing on different aspects of acquisition, including the developmental sequence of the *ba* construction (S. Zhang, 2002), whether there is a process of pragmaticization when learning the construction (Jin 1992), how frequent the *ba* construction is produced (Chang, 2014; Du, 2004), whether learners know the complex predicate constraint and the definite NP constraint (Du, 2004; Huang & Yang, 2004; Xu, 2012; S. Zhang, 2002), how learners acquire different sub-types of the *ba* construction (Xiong, 1996; Yu, 2000; Wen 2010), how learners acquire core syntactic properties of the construction and the interface properties (i.e., syntax-semantics interface and syntax-discourse interface) of the construction (Xu, 2012), and error analysis (B. Zhang, 2010). Of these various perspectives, the frequency of production and the knowledge of the complex predicate constraint are the main concerns of

our study. Du (2004, p. 138) found that out of 10 controlled
situations where *ba* is preferred or expected, L2 learners
produced a very small number of *ba* on average, ranging from
1.71 (low level) to 2.30 (intermediate level), in contrast to 6.1
by native speakers. Chang (2014) reported that in the TOCFL
Learner Corpus[1], which is a written corpus, learners at all
levels on average used *ba* 1.38 times per 1000 characters; low
level learners (A2 by CEFR) produced the least, 0.878 times
per 1000 characters. Both studies demonstrate the low usage
of *ba* by L2 learners. Nonetheless, previous studies also
showed that most learners have knowledge of the complex
predicate constraint such that when *ba* occurs with a bare
verb only, learners felt that something is missing. In
experiments on production as well as comprehension learners
performed well associating *ba* with resultative verb
compounds and the perfective marker *-le* (Du, 2004; Huang

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[1] http://tocfl.itc.ntnu.edu.tw

& Yang, 2004; Xu, 2012), and they also did well in not using

ba with stative verbs (Huang & Yang, 2004; Xu, 2012).

2. Research question

The review above suggests that, for adult learners at least, a

new construction is difficult to acquire. When we look at the

immersion programs, the questions naturally arise: How do

young immersion learners acquire the same structure? This is

what we will try to find out. The research questions are as

follows:

Did immersion learners produce the *ba* construction?

Do they know the complex predicate constraint imposed on

ba?

3. Method
3.1. The program

Institution X, where we collected the data, is a private PK-8

school, which includes preschool, junior school, and middle

school. There are about 200 students in the school, and the

average class size is ten or more. It offers immersion classes

in Spanish, French, German and Mandarin. The school started the Mandarin immersion program in 2010. It is a one-way, 50/50 immersion program, where half of the school day is taught in Mandarin. There are two levels of Mandarin immersion classes, the preschool class and the junior class. The preschool immersion class is attended by preschool and kindergarten children, while the junior class is attended by children from the first grade to the fourth grade. The class that is the target of our study is the junior class. Activities in the class include Chinese language, Chinese culture, science, art, and music. Math is taught in English.

3.1.1   Course Materials

Course materials for the junior class include a set of textbooks and a workbook. The textbook is *Xiǎoxué Huáwén* ('Chinese language for Primary Schools'), which comes in several volumes by levels. The textbook is also used for heritage students at some weekend schools in the U.S. The textbooks provide language lessons in both traditional and simplified characters, but no English. There are also

workbooks that accompany the textbooks. In class the teacher passed out handouts in characters and Pinyin. Students had in-class writing exercises and homework assignments. Homework assignments included reading an assigned lesson out loud and character writing. Grade 3 and grade 4 students also had assignments including answering questions in characters and writing a simple diary. In class students used an e-book that corresponds with the textbook, which includes voice reading with color-changing characters, animation, and games for character practice. The teacher also used online videos in Mandarin for songs and cultural topics.

3.1.2. Participants

Participants of the study consist of students in the junior immersion class. All of the students are from English-speaking families with English as their L1. The class started out with ten students: three in 1st grade, four in 2nd grade, one in 3rd grade and two in 4th grade. In the middle of the semester, during the eighth week of the semester, a 2nd grade student moved out of state, leaving the class with nine

students. Except for one student in the 1ˢᵗ grade, all students entered the Mandarin immersion program at the preschool. This means 2ⁿᵈ, 3ʳᵈ and 4ᵗʰ grade students have been in this class one, two, and three years respectively.

All students were able to communicate in simple Mandarin with the teacher and with each other, e.g., asking for playing time, complaining about other students, or telling the class about their weekend. The teacher spoke Mandarin the entire class time, using English words only for clarification, e.g., when students asked about a Chinese word they have not heard before.

Students sometimes did the class activities together, e.g., learning about a culture topic, singing, drawing; other times they were divided into groups by grade. For example, during a language practice session 1ˢᵗ grade students would work on the e-book while 2ⁿᵈ grade students would learn how to write characters on paper, and 3ʳᵈ and 4ᵗʰ grade students would write sentences with the words just learned. Students also received different test questions during a test. 4ᵗʰ grade

students were tested on characters that had not been introduced to 2nd grade students.

3.2. Data Collection

Data was collected during a one-semester visit to the class. Only one method was used in data collection: observations. One of the authors (referred to as 'Author X') was granted permission to sit in class during one semester. Each week the researcher visited the class for four hours, and during each visit, she wrote down what was orally produced by students as well as the teacher; some student's written exercises produced during class time were also written down. In addition, the notes also included activities the class was engaged in, types of exercises carried out in class, etc. Altogether 56 hours of class time was observed. Due to school regulations, audio or video recording was not allowed.

Author X notes that the class observed is unusual in that it was a talkative class. All students were eager to participate, answering questions or volunteering information. In fact, oftentimes they did not follow the teacher's

instructions when asked to be quiet. The dynamic interaction between the teacher and the students means that the students produced a large number of utterances in class, 4628 in 56 hours, including both spontaneous utterances and utterances for the purpose of practice. It also means there may have been utterances that were not recorded at the time, especially when more than one student was competing for attention. Nonetheless, most of what was said was written down. The report below is therefore representative of what was going on in the class.

4. Results
4.1. *Ba* Construction Produced by Learners

We first consider *ba* sentences produced by learners. During the class visits, immersion learners did not produce many *ba* sentences. There were 13 *ba* tokens in total, listed below, from (7) to (19). The 13 sentences can be divided into two groups, ones that were produced spontaneously and ones that were produced during a practice session. *Ba* occurs in lessons for

each of the four grades; however, during the observation period only second grades practiced using *ba* in class. These practice sentences were given in (3) - (7).

(3) Bǎ yì   fēng xìn   gěi běijí xióng.

BA one CL   letter give polar bear

'(I) gave a letter to a polar bear.'

(4) Wǒmen bǎ píngzi tuī   dǎo.

We   BA bottle push down

'We pushed the bottle down.'

(5) Bǎ shuǐ   sònggěi běijí   xióng.

BA water give   polar bear

'I gave water to a polar bear.'

(6) Jīntiān wǒ bǎ lǎoshī   jiao   de jùzi

today I   BA teacher teach DE sentence

liànxí   le   hǎojǐ   cì.

practice   PERF several   times

'Today I practiced several times the sentences

that the teacher taught.'

(7)   Qǐng bǎ shuǐhú dào zài nàlǐ.

please BA kettle   pour at   there

'Please pour the water over there.'

(3-6) were produced by the same learner; the first

three were oral productions, while (6) was produced during a

written exercise. All sentences were prompted by the

instructor. The instructor demonstrated the use of *ba* by

examples, without explanation on the word order or

restriction on the predicate. The amount of time spent on

practicing *ba* was about the same as the amount spent on

other vocabulary items in the lesson being covered at the

time, which was no more than a few minutes. (7) was

produced by a different 2nd grader when the teacher asked

students to say something using the word *qǐng* 'please'.

Although the sentence did not serve a communicative

purpose but was produced for the sake of practice, it suggested that the learner had some knowledge about the *ba* construction.

Turning to *ba* sentences that were produced spontaneously, based on the predicates used by the learners, we identified 27 utterances where *ba* was required or preferred. Of these utterances *ba* was used in eight cases, listed in (8-15).

(8)   Wǒmen bǎ wǒmen shūbāo   fàng zài

        we   BA we   school-bag put   at

        …   ránhòu   qù bathroom.

        Then   go bathroom

        'We leave our school bags (there), then go to

        the bathroom.'

        (2nd grader)

(9)   Tā   bǎ zhè ge   dōngxi fang.

he   BA this CL   thing   put

'He put this one ...'

(2nd grader)

(10)   Luó lǎoshī   bù   bǎ   nàge take off.

Luo teacher not BA   that   take off

'Teacher Luo, don't take that off.'

(3rd grader)

(11)   Lǎoshī, X méiyǒu   bǎ   tāde   planner

teacher, X didn't   BA   his   planner

away.

away

'Teacher, X didn't put his planner away.'

(2nd grader)

(12)   Wǒmen   yǐjīng   yǒu   bǎ   quān   cí

we   already have BA   circle word

quān   qǐlái   hé   wǒmen   bù

circle   DIR   and   we   not

zhīdào.

know

'We have circled the target words and we don't

know …'

(4th grader)

(13)   Nǐmen   bǎ   zhè   yícì   wán   wánle, wǒ

you   BA   this time play finish   I

jiù…,   ránhòu   wǒ   jiù   huì   zuò

then   then   I   then   will   do

wǔ   gè   nǐ   huì   zuò.

five   CL   you will do

'You finish this turn, then I will do five times,

then you will do it.'

(4th grader)

(14)   Luó lǎoshī nǐ   kěyǐ bǎ wǒde míngzì

        Luo teacher you can   BA   my   name

        cā   le   ma?

        erase   PERF Q

        'Teacher Luo, can you erase my name?'

        (2nd grader)

(15)   Wǒ   yào   bǎ pánzi ná   zhèlǐ ba.

        I   should BA plate take here   PRT

        'Should I put the plate here?'

        (2nd grader)

The first four sentences, (8-11), were produced before the *ba* construction was introduced as a grammatical pattern for 2nd graders in class. This suggests that some of the learners already have knowledge of the construction, probably from previous years, and they were able to use it in daily activities. (12) and (13) were produced by a 4th grade

learner. At the time when (13) was produced a group of students were playing a game, and this student attempted to arrange the turns of playing. (14) and (15) were produced by a 2nd grade student on two occasions. When the class was doing a rehearsal for a play, the student attempted to establish where the plate should be.

Looking at what was produced, the first two sentences were missing a locative phrase, but in the context what was conveyed was quite clear, as the location was conveyed by gesture. It is significant that the learners have associated *ba* with a locative context, which is one of the ways to satisfy the complex predicate requirement. Three of the eight sentences produced spontaneously have a locative context, (8), (9) and (14). (10) and (11) both include code-switching. In (11) because of the switch, the last part of the sentence was in the English word order, which does not allow a verb following the object. Therefore, the missing verb may be a result of the English word order triggered by codeswitching. Aside from the missing locative phrase and

missing verb, the predicates in the other sentences are all complex, including the code-switched predicate in (14). In addition, all of the sentences were used in contexts where the use of *ba* is appropriate and expected— the object of *ba* denotes old information. This suggests that when learners in the immersion class did produce *ba*, they used it mostly correctly and appropriately.

There were 19 utterances where *ba* was obligatory or preferred but was not used. Two examples are illustrated here:

(16)   Nǐ   kěyǐ   cā   wǒde   míngzì,   wǒ   shuō

you   can   erase   my   name   I   speak

-le   hěnduō   zhōngwén.

- PERF   much   Chinese

'You can erase my name; I've spoken a lot of

Chinese.'

(3rd grader)

(17)   Fàng tā zài zhèlǐ.

       put   it   at   here

       'Put it here.'

       (4th grader)

(16) was produced by a 3rd grade student, asking the
teacher to take his name off the white board. The teacher had
earlier put student names on the board and once a student
completed a speaking task, the teacher would erase his/her
name. 'Erase' is expressed by the resultative verb compound
cādiào 'wipe off' or in the perfective aspect *cā-le* 'wipe-perf',
and *ba* is usually used with the verb compound. In the learner
data there are 10 tokens of *cā* that were used in the sense of
'erase', of which one token, *cā-le* 'wipe-perf', was correctly
used with *ba*, shown in (14), one token was *cādiào* 'wipe off'
without *ba*, while the other eight tokens were used with the
bare verb *cā*, as in (16). The verb does not occur in any of the
lessons covered during the observation period; it is likely the
class had not been specifically taught the compound *cādiào*
'wipe off', as most learners didn't produce it.

(17) was produced by a 4th grader, where the verb *fàng*
'put' occurs with both the direct object and a locative phrase,
in the SVO order. This is a context where the use of *ba* is
required. It seems that most learners have not yet learned the
requirement. There are two more such tokens in learner data.
The situation does not arise often, however. Since Chinese is
a zero-anaphora language, in spoken language, especially
conversation, an understood object is often left out. In the
learner data there are many instances where the direct object
was not expressed; (18) is an example with the verb *fàng* 'put':

(18) a. Wǒ huì fang zài wǒde   shūbāo.

   I   will put in my   backpack

   'I will put (it) in my backpack.'

  b. Wǒ kěyǐ fang huíqù.

   I   can   put   back

   'I can put (it) back.'

(18) are well-formed sentences in their context and they have the word order of S-V- Locative/Directional. It looks like when the direct object is also expressed, learners tend to keep the same order and produce S-V-O-Locative/Directional. During the entire period of observation, the learners did not produce any utterances where *fàng* is used with *ba* and with both the direct object and a locative phrase.

4.2. *Ba* Construction Produced by the Teacher

Because all of the students come from English-speaking families, most of their Mandarin input, other than course material, is from the teacher's speech in class. Therefore, by examining the teacher's speech we will gain some insight into the nature of the input the immersion learners are exposed to.

In contrast to the low number of *ba* sentences produced by the learners, the teacher produced a large number of *ba* sentences, 284 tokens in total, averaging 5 tokens per hour. We will consider them in terms of clause

types and predicate form; we will also examine how certain

verbs were used by the teacher.

First, in terms of clause types, the *ba* sentences can be

grouped into six types, listed in Table 1.

Table 1. Clause types of ba sentences in the teacher's speech

Types of *ba* Sentences	Number of Tokens
Imperative Sentences	231
Suggestions	5
Yes-no Questions	8
Wh-Questions	9
Statements	27
Others – example sentences in vocabulary quizzes or texts	4
Total	284

As shown in Table 1, most of the *ba* sentences

produced by the teacher were imperatives or suggestions,

accounting for 83.1% (236/284) of the *ba* tokens in her

speech. The teacher frequently gave commands or reminders

in the form of the *ba*-construction, such as asking students to

sort out their reading materials, put things away, and so on, as

illustrated below.

(19)   Bǎ   tā   fànghǎo.

        BA   it   put-away

        'Put it away.'

(20)   Bǎ   bǐ   gěi   wǒ.

        BA   pen   give   me

        'Give the pen to me.'

(21)   Nǐ   jīntiān   yào   bǎ   cāngshǔ   dài   huí

        you   today   will   BA   hamster   take   back

        jiā   ó.

        home   PRT

        'Today you will take the hamster back home,

        OK?'

(21)   is a reminder, with a final particle *ó* to soften

        the tone.

In terms of predicate form, a variety of predicate
types were used, as given in Table 2:

Table 2. Types of ba predicate in the teacher's speech

Predicate Type	Number of Tokens
Resultative compound	75
Directional compound	111
Locational (with *zai* or *dao*)	50
V Obj	30
V -*le*	8
V -*de* Adj	3
V quantity	3
V predicate	3
Adv V	1
Total	284

A majority of the *ba* sentences (65.5%=186/284)
contain a resultative or a directional complement; the former
is illustrated in (19) above, while the latter is illustrated in (21)
and (22):

(22)   Bǎ kèběn   ná   chūlái.

        BA textbook take out-DIR

        'Take out your textbook.'

Earlier it was pointed out that learners had difficulty producing *ba* sentences with a locative verb such as *fàng* 'put' when the direct object is expressed, e.g., (17). A question that is of interest is how the teacher used the verb. The answer will provide us a clue as to the type of input the learners received for the verb. The teacher produced 88 tokens *fàng* both with *ba* and 82 tokens without *ba*. This may have to do with the fact that a common request the teacher made in class was to put things away, e.g., backpack, course materials. Among *ba* sentences, *fàng* is the most frequent verb, accounting for 31% (88/284) of all of the verbs used with *ba*. The tokens can be grouped into four categories with respect to what the verb combines with, given in Table 3.

Table 3. Types of fang 'put' used in the teacher's speech

Types of *fàng* 'put'	With *ba*	Without *ba*
fàng zài + locative	31	17
fàng zài + *yìqǐ* 'together'	6	0
fàng + resultative/directional verb	50	48
fàng + *de* phrase (phrasal resultative)	1	1
fàng + *dào* + locative	0	6
fàng + direct obj	0	3
fàng + locative	0	3
fàng + quantity	0	2
fàng	0	2
Total	88	82

Table 3 shows that in the teacher's speech *fàng* basically occurs in two environments when used with *ba*: (i) with a resultative or a directional verb complement, with 50 tokens, e.g., *fàng huíqù* 'put it back', *fànghǎo* 'put it away', *fàng jìnqù* 'put it in'; (ii) with *zài* followed by a locative phrase, which has 31 tokens, e.g., *fàng zài zhèr* 'put it here'. When used without *ba*, *fàng* was used in a wider variety of environments, as also listed in Table 3, but it has the same distribution pattern as *fàng* with *ba*: the two most common environments

are with a resultative or directional complement and with the *zài* locative phrase.

Two observations can be made about Table 3. First, *fàng* was used without *ba* almost as often as it was used with *ba*. The discrepancy in frequency between the two environments is small. That is, *fàng* was not tied with *ba* in the teacher's speech. Second, with or without *ba*, *fàng* was mostly used with a resultative or directional complement, followed by the *zài* locative phrase. The latter constitutes 49% (48/98) of the former. This means in the teacher's speech *fàng* was also not tied with the *zài* locative phrase. This may explain why the learners mostly did not produce *ba* sentences with *fàng* 'put'.

On the other hand, high frequency does not necessarily lead to learner production. One difficulty the learners had concerns the compound verb *cādiào* 'erase, wipe off'. As mentioned earlier, eight out of 10 tokens of *cā* in the sense of 'erase' in learner data were expressed with the verb alone without the resultative. How did the teacher use *cā*

'wipe'? Altogether 25 tokens of *cā*, by itself or in a compound, were used by the teacher, given in Table 4:

Table 4. Occurrences of cā 'wipe' in the teacher's speech

Form	Number of Tokens
cā 'wipe' + obj	2
cā 'wipe' (obj unexpressed)	3
cā diào 'wipe off, erase'	9
cā gānjìng 'wipe clean'	5
cā gān 'wipe dry'	5
cā hǎo 'wipe good'	1
Total	25

Most of the tokens, 20 out of 25, are resultative compounds, including nine tokens of *cādiào* 'wipe off'. Despite this the learners did not make an association of *cā* with a resultative. This is a case of learner production not matching the input they received.

5. Discussion
In the above we have seen how the learners produced *ba* sentences during the four-month period; we also analyzed how the teacher used the construction in class. We can now answer the research questions, repeated below:

Did immersion learners produce the *ba* construction? Do they know the complex predicate constraint imposed on *ba*?

5.1. Learner Performance

Consider the use of the *ba* construction first. During the observation period, the learners produced 13 tokens of *ba* sentences, five in practice and eight in spontaneous situations. The latter was among the 27 utterances where *ba* was required or expected. The low rate of production is not surprising, given what previous studies (e.g., Chang 2014; Du, 2004) have shown. For the immersion young learners, the low production may be the result of a number of factors. First, as noted earlier, the use of *ba* is subject to structural and discourse factors. The complexity itself poses a considerable challenge to learners. Second, for the learners we observed, the association between *ba* and certain predicates have not been established. They have not been taught how certain predicates such as *fàng* 'put' and *cā* 'erase' (intended) require or prefer the use of *ba*, neither is the association of these predicates with *ba*

strong in the teacher's speech. Out of the 19 cases where *ba* was expected but was not used, 13 concern these two verbs. As we saw earlier, the learners did not produce a single case of *ba* with *fàng* and the object. A third reason is that the learners were simply more comfortable with the SVO structure even when they were presented with an example of *ba*. In one instance, immediately after the teacher's instruction on paper folding, in the form of the *ba* construction, the learner turned it into an SVO structure, as in (23):

(23)   Teacher: Bǎ   zhǐ   duìzhé.

BA   paper fold-into-half

'Fold the paper into half.'

Student: Hǎo le.   Wǒ duìzhé

done PRT   I   fold-into-half

wǒde zhǐ.

my   paper

'I'm done. I folded my paper into

half.'

But the low production of *ba* does not mean that the learners have little understanding about *ba*; in fact, the way they used *ba* showed just the opposite.

Of the 13 tokens that were produced, aside from the ones with missing material in the predicate, the other sentences all satisfy the complex predicate constraint. The material that was added to the verb including locative phrase, resultative complement, quantity complement and other prepositional phrases. Even the code-switched verb in (10) is a complex verb, suggesting that the learner who produced (10) has made the association between *ba* and complex verbs regardless of which language was used. We can conclude that learners had a good knowledge of the complex predicate constraint. With respect to the contexts, all of the *ba* sentences that were produced spontaneously were used appropriately. Earlier it was mentioned that a corpus study (Liu, 2007) showed that in adult language the *ba* construction is used when the *ba* NP carries old information and is not highly topical. When we look at the contexts in which the *ba*

sentences were produced spontaneously, we can confirm indeed all of the *ba* NPs are old, e.g., *shūbāo* 'school bag', *cí* 'word', *pánzi* 'plate'; furthermore, they are not topical—the topic that is being continued in each sentence is the subject. Thus it is remarkable that the learners in the immersion class produced mostly grammatically accurate and completely contextually appropriate *ba* sentences.

The picture that emerges is one with little production but high accuracy. At the same time, acquisition of both structures demonstrates the effect of L1 influence as well as structural complexity.

5.2. The Role of Teacher Input

Since the immersion learners received no Mandarin input after class other than homework assignments, the teacher's speech in class was an important source of Mandarin input for the learners. How did teacher talk influence learners' acquisition? The findings point to a mixed effect.

First, a large amount of input did not necessarily lead to learner production. As reported earlier, the teacher used

the *ba* construction 284 times during the observation period, most as requests; however, it did not seem to have much effect on learner production. Learners preferred to stay with the canonical SVO word order. This underscores the difficulty of using a new structure with a non-canonical word order. Nonetheless, the type of input that learners received did play a role in their production. We have also reported that the learners have the knowledge of the complex predicate constraint imposed on the *ba* construction; in the data there is no token of *ba* occurring with a bare verb. This is directly related to how the teacher used the construction. She used *ba* in a variety of environments, with resultative compounds, directional compounds, locatives, all of which are complex predicates. Although the constraint was not specifically taught or practiced in class, the learners have learned that *ba* occurs with a complex predicate.

The nature of the teacher input may also explain why the learners did not use *ba* in an obligatory environment. Earlier it was shown that when the verb *fàng* 'put' occurs with

its object and a locative phrase, *ba* is obligatory, but the learners did not produce any such sentences even though they did produce *fàng*, and sometimes with *ba*, as (12-13). We also showed that in the teacher's speech *fàng* did not always occur with *ba*, neither did *fàng* always occur with a locative phrase. The lack of consistency between *fàng* and *ba* and between *fàng* and a locative phrase in the teacher's speech may have contributed to learners' failure of using *ba* when it is obligatory.

In short, our data suggests that teacher input plays an important role in how learners develop their language skills, e.g., acquiring a constraint and overcoming L1 influence. At the same time, the data also shows that input by itself is not quite sufficient when it comes to producing a new structure, especially when the use of the latter is subject to a number of factors.

5.3. Comparison with Adult Learners

The data produced by the learners in the immersion class provides a useful reference for us to compare the acquisition

of Mandarin between adult learners and immersion learners.
The contexts under which the two groups acquire Mandarin
are quite different, one in college classrooms and the other in
an immersion context; nonetheless, it is instructive to see how
the two groups acquire the two structures. Is the *ba*
construction difficult for both groups? Are both groups of
learners affected by L1 influence in the same way? For adult
data we rely on Du (2004)'s experimental study on the *ba*
construction. It is the only study on production under
contexts that facilitate the use of *ba*. The subjects in her study
were at the level of intermediate (30 weeks of intensive
classes) to advanced (60 weeks); they were therefore at a
higher proficiency level than the young immersion learners.

First, on the use of the *ba* construction, neither adult
nor immersion learners produced many *ba* sentences. In the
above we have seen that immersion learners produced very
few *ba* sentences. In Du's (2004) study on adult learners,
subjects were asked to describe two-action videos with key
words provided. In each video clip, the first action presents

an entity, e.g., someone washes their hands, and in the second action the same entity is being acted on, e.g. the person wipes their hands dry. The second action is a context where *ba* is preferred. The results show that the average production rate of *ba* for the second action is low among learners, as mentioned earlier; out of 10 situations, learners produced on average 1.71 (low), 2.30 (intermediate) and 2.24 (advanced) tokens.

However, as discussed earlier, when immersion learners did produce *ba,* their utterances suggest that they have the knowledge complex predicate constraint. Similar findings are seen among adult learners. Their knowledge of the constraint can be demonstrated by (24-25): (Du, 2004; p. 155 & p. 161).

(24)   Tā   dú   nà   zhāng xìn,   ránhòu… xìn…

        she read   that CL   letter then   letter

        ránhòu…   bǎ xìn   sī...   ránhòu

        then BA   letter   tear   then

sī…   sī…   xìn

tear… tear… letter

'She read the letter, then… letter… then…

tore the letter.'

(25)   Tā xiān… xǐ   shǒu, ránhòu yòng… zhǐ…

she first   wash hand, then   use   paper

bǎ shǒu   cā… bù   zhīdào

BA hand   wipe not   know

zěnme   shuō

how   say

'She first washed her hand, and then used

paper to wipe hand … don't know

how to say it.'

   In (24) the first half the subject attempted to use the

ba construction, but he couldn't quite do it. The subject then

changed the word order back to SVO and produced a

sentence without *ba*. Sentence (25) demonstrates a similar

situation: the subject also attempted to use *ba* but had to stop

because he realized he couldn't complete the *ba* sentence.
Both examples demonstrate that the subjects were aware that
there needs to be some material besides the verb in the *ba*
predicate although they were not able to produce the material.
There is a difference between the two groups, however: some
adult learners did produce *ba* with a bare verb, but none of
the immersion learners did. This suggests that the immersion
learners, but not the adult learners, have uniformly acquired
the complex predicate constraint.

Overall, the *ba* construction is difficult for both
groups of learners. L1 influence also affects the two groups
differently. Among adult learners it is mostly seen in errors;
for immersion learners it is manifested in errors as well as
code-switching.

There is another important difference between adult
learners and immersion learners in terms of how Mandarin is
used in class. While Mandarin is the target language for both
adults and immersion learners, for the latter Mandarin is also
the language of communication. Learners used it to get

permission to leave the classroom, chat with classmates, and express their opinions, etc. This is a characteristic that is noticeably absent among adult learners at a comparable stage (low-intermediate). In first-year or second-year language classes at the college level Mandarin is rarely the language of communication for learners. In this sense the immersion learners are similar to Chinese children learning Mandarin in a Chinese classroom.

Therefore, immersion learners have something in common with both L1 and L2 adult learners of Mandarin; at the same time, they are different from both types of learners. They are not native speakers of Mandarin because their Mandarin utterances show influence of English; at the same time, they differ from low or intermediate L2 adult learners who learn Mandarin in a classroom setting in that they use Mandarin spontaneously on a daily basis even as they acquire Mandarin as a second language.

6. Conclusion

In this study we have examined how young learners in a Mandarin immersion program acquire Mandarin—in particular, how they used the *ba* construction. Three characteristics of their grammar can be identified. First, the learners did not like to deviate from the canonical SVO word order and it was difficult for them to use a new structure with a non-canonical SOV word order. Second difficulty with the structure may be attributed to L1 influence; in addition, the inability of producing *ba* sentences may also have to do with the structural complexity of the construction. Third, the effect of input from the teacher is mixed. A large amount of input did not lead to a productive use of *ba* by the learners; on the other hand, the teacher's input may have contributed directly to the learners' knowledge of the complex predicate constraint on the *ba* construction. Therefore, at this stage input contributes to appropriate use of a new structure although it does not yet result in productivity.

While this study only offers a glimpse of the grammar of young immersion learners, the findings we have so far provide strong evidence that immersion learners are a distinct group of learners. They are L2 learners who use Mandarin for communication even at an early stage. They have a grammar of their own, and their language development offers a new window into bilingual language acquisition.

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