

A Corpus-based Analysis of Prosodic Pauses in *bǎ*, *gěi* and *ràng* Constructions in Taiwan Mandarin

Chihkai Lin

Tatung University / No. 40, Section 3
Zhongshan North Road, Taipei City,
Taiwan (R.O.C)

linchihkai@gmail.com

Abstract

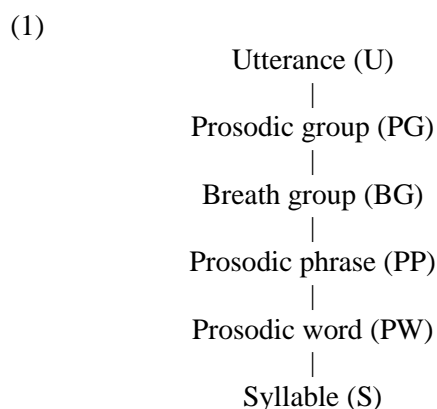
This paper investigates prosodic pauses in *bǎ*, *gěi*, and *ràng* constructions in Taiwan Mandarin and adopts a corpus-based approach by collecting spoken data from an online corpus, *NCCU Corpus of Spoken Taiwan Mandarin*. The results show that prosodic pauses are not preferred before and after the *bǎ*, *gěi*, and *ràng* words in the three constructions. However, whenever there is a pause, the left edge of the *bǎ*, *gěi*, and *ràng* words is preferable to the right edge.

1 Introduction

This paper investigates prosodic pauses in *bǎ*, *gěi*, and *ràng* constructions in Taiwan Mandarin from a corpus-based approach. Prosodic pauses have been recognized as a significant indicator to mark the syntactic boundaries, provide time for speech planning, indicate semantic focus and show a cue of turn-taking. According to Zellner (1994), there are two major types of pauses in speech: linguistic pause and psychological pause. The linguistic pause which is based on production is interpreted as a physical phenomenon when no acoustic signal is observed in spectrum. The linguistic pause is divided into intra-segmental pauses and inter-lexical pauses, showing a positional difference between pauses within a phonological word and pauses across phonological words. On the other

hand, the psychological pause is based on perception, and there are also two types of pauses: silent pauses and filled pauses. The two types are distinguished by fillers. Silent pauses lack fillers, while filled pauses contain pauses introduced by fillers, such as *ah* and *um* in English.

Prosodic pauses function as an indicator to mark boundaries and determine prosodic hierarchy. According to Tseng, Chang, and Su (2005), Tseng (2006, 2008), and Tseng and Chang (2008), the prosodic hierarchy of Mandarin Chinese is shown in (1).¹

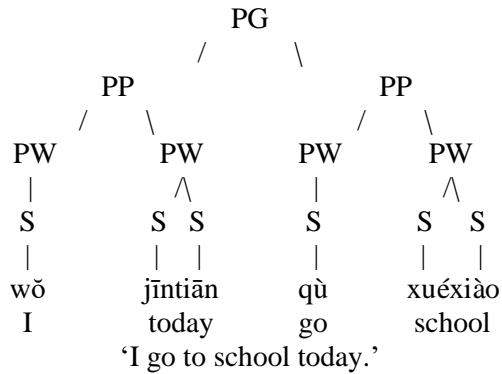


In this hierarchy, there are five levels of breaks between the boundary of syllables (B1), prosodic words (B2), prosodic phrases (B3), breath groups (B4), and prosodic groups (B5). Tsai (2005) and

¹ Breath group in (1) is not always necessary because it is related to how long a speaker can talk within breaths. When the meaning is fully expressed, breath group is merged into the higher prosodic group (Tseng 2008: 662).

Chen (2015) suggest that the boundary between prosodic phrases (B3) is more prominent than the one between prosodic words (B2). That is to say, the phrasal boundary plays a more crucial role than the word boundary. Example is shown in (2).

(2)



Theoretically speaking, pauses can occur between boundaries at any level, but the B3 boundary is more salient than other boundaries. In other words, the pauses between prosodic phrases would be acoustically longer and perceptually noticeable. For instance, the pause between *jīn* and *tiān* in *jīntiān* 'today' at the syllable level is less natural than the pause between *tiān* in *jīntiān* 'today' and *qù* 'go' at the phrasal level.

In addition to prosodic pauses, the example in (2) also shows the alignment of prosodic pause and syntactic structure. In most constructions, there is no match between syntax and phonology. However, some 'special' constructions in Mandarin Chinese should be analyzed differently. For example, *bǎ* construction in Mandarin Chinese is not a typical one and the phonological status of the *bǎ* word is always left unknown. As Mandarin Chinese includes several special constructions, and the phonological statuses of the keywords are often neglected, this paper discusses three frequently-used special constructions in Mandarin Chinese: *bǎ*, *gěi*, and *ràng* constructions. To find out the phonological statuses of *bǎ*, *gěi*, and *ràng* constructions, this paper focuses on prosodic pauses of the *bǎ*, *gěi*, and *ràng* words in the three constructions.

To explore prosodic pauses in the three constructions, this paper adopts a corpus-based approach, especially using spoken data. To show how the three constructions are prosodically analyzed, this paper is organized as follows.

Section 2 explores syntactic structures of *bǎ*, *gěi*, and *ràng* constructions and discusses the demarcation of the *bǎ*, *gěi*, and *ràng* words. Section 3 introduces the corpus used in this paper and data collection criteria. Section 4 reports the distribution of the *bǎ*, *gěi*, and *ràng* constructions in the corpus. Section 5 discusses two issues in the three constructions. Section 6 concludes this paper.

2 *Bǎ*, *gěi* and *ràng* constructions

The *bǎ*, *gěi*, and *ràng* words in Mandarin Chinese, are originally verbs, as in *bǎ* 'to hold', *gěi* 'to give' and *ràng* 'to yield'. Under grammaticalization (Chang 2001, 2006), new usages of the *bǎ* and *gěi* words have emerged. Teng (2019) marks *bǎ* as a particle, *gěi* as a preposition, and *ràng* as a verb. In modern Mandarin Chinese, *bǎ*, *gěi*, and *ràng* are commonly seen in the constructions of NP₁ + *bǎ/gěi/ràng* + NP₂ + VP (henceforth X-zì constructions), where they appear between two NPs, as in (3) – (5).

(3) tā bǎ shū kàn wánle

tā bǎ shū kàn
3rd.person BA book read

wán-le
complete-ASP
'He has read the book.'

(4) wǒ gěi tā kàn mùlù

wǒ gěi tā kàn
1st.person GEI 3rd.person read

mùlù
catalog
'I show him a catalog.'

(5) wǒ ràng tā chī dānkāo

wǒ ràng tā chī dānkāo
1st.person RANG 3rd.person eat cake

'I let him eat cake.'

In the X-zì constructions, the *bǎ*, *gěi*, and *ràng* words are not the main verbs. As shown in (3) – (5), the *bǎ*, *gěi*, and *ràng* words precede the verb phrase and appear between two noun phrases. There should be a close relationship for the X in an X-zì construction to the two noun phrases. The X

and the two noun phrases could be within a constituent, as shown in (6).

- (6) a. NP₁ + *bǎ* + NP₂ + VP
 b. NP₁ + [*gěi* + NP₂]_{pp} + VP
 c. NP₁ + [*ràng* + NP₂]_{vp} + VP

In *bǎ* construction (6a), the *bǎ* is separated from the two noun phrases; in *gěi* construction (6b), the *gěi* and the following noun form a prepositional phrase (PP). In (6c), the *ràng* and the following noun constitute a verb phrase.

Following (6), this paper looks into the real distribution of the *bǎ*, *gěi*, and *ràng* words in spontaneous speech to check whether they behave like content or functional words. Therefore, there are four possible positions to demarcate the pauses of the *bǎ*, *gěi*, and *ràng* words in the X-zì constructions, as shown in (7).

- (7) a. NP₁ + X + NP₂ + VP
 b. NP₁ + [X + NP₂ + VP
 c. NP₁ + X] + NP₂ + VP
 d. NP₁ + [X] + NP₂ + VP

The first situation (7a) is that there is no pause before and after the *bǎ*, *gěi*, and *ràng* words. It is also possible that there is only one pause before (7b) or after (7c) the *bǎ*, *gěi*, and *ràng* words. It might be rare to see, but the situation (7d) is also possible when there are two pauses before and after the *bǎ*, *gěi*, and *ràng* words.

As the word order of the *bǎ*, *gěi*, and *ràng* words are similar in the X-zì constructions, it is unknown whether they show the same tendency in the phonological demarcation. Thus, this paper aims to find possible answers to the question.

3 Corpus and data selection criteria

This paper investigates the prosodic pauses of the *bǎ*, *gěi*, and *ràng* words in the X-zì construction in Taiwan Mandarin, and this paper collects data from *NCCU Corpus of Spoken Taiwan Mandarin*, an online corpus of spoken Taiwan Mandarin established by National Chengchi University.²

This online corpus includes 49 conversations recorded from 2006 to 2019, and the average recording time for each conversation is about 20 minutes. Longer or shorter conversations are also

available in the corpus. The conversations are elicited in Chinese with numbered turn-taking and clear marking of three types of pauses. Short pause is marked with two dots, and medium pause with three dots. Long pause is marked with not only three dots but also the duration of time.

The procedure of data collection for this paper is as follows. In the online corpus, there is a search engine in the upper right corner of the page. However, this paper does not adopt this method to look for the entries of the *bǎ*, *gěi*, and *ràng* words because data collection via search engine results in 50 entries at most. Instead, this paper scrutinizes the 49 original conversations under the section of *corpus data*.

The second step is to collect the entries of the *bǎ*, *gěi*, and *ràng* words, respectively. By using the function of *find box* (Ctrl + F) to locate the *bǎ*, *gěi*, and *ràng* words, this paper gleans all the marked data and then classifies them in an EXCEL file.

The data selection criteria are as follows. As the *bǎ*, *gěi*, and *ràng* words are polysemous, the entries require careful examination. Usages other than those in the X-zì the construction are excluded from further data analyses in this paper. For example, the *bǎ* word can be a classifier (CL), as in *yì-bǎ yǔsǎn* (one-CL umbrella) ‘an umbrella’. As for the *gěi* word, it also can be a verb ‘to give’ or a preposition ‘to’, as in (8) and (9).

- (8) wǒ gěi tā yì-bǎ yǔsǎn
 wǒ gěi tā yì-bǎ
 1st.pronoun give 3rd.pronoun one-CL
- yǔsǎn
 umbrella
 ‘I give him an umbrella.’

- (9) wǒ dǎdiànhuà gěi tā
 wǒ dǎdiànhuà gěi
 1st.pronoun call to
- tā
 3rd.pronoun
 ‘I call him.’

Concerning the *ràng* word, it can be a verb ‘to yield’, as shown in (10).

² The link is <http://spokentaiwanmandarin.nccu.edu.tw/>.

- (10) wǒ ràngzuò gěi tā ..bǎ tāmen zài-qù Hsinchu
 wǒ ràngzuò gěi BA 3rd.pronoun drive-go Hsinchu
 1st.pronoun yield.seat to ‘Then drive them to Hsinchu.’
- tā
 3rd.pronoun
 ‘I yield a seat to him.’
- (12)
 NCCU-TM021-CN-FM
 151 F:

After the entries which are not in the X-zì constructions are marked, all the selected data are further analyzed according to whether there are pauses and which sides they appear. Finally, the prosodic pauses in the X-zì constructions are calculated, and the results are reported in section 4.

4 Results

This section reports the distribution of the prosodic pauses of the *bǎ*, *gěi*, and *ràng* words in Taiwan Mandarin. The distribution is shown in Table 1.

Edge X	Left	Right	Both	None	Total
<i>bǎ</i>	36	14	0	307	357
<i>gěi</i>	13	1	0	69	83
<i>ràng</i>	20	3	0	112	135
Total	69	18	0	488	575

Table 1: The distribution of the *bǎ*, *gěi*, and *ràng* words in the X-zì constructions

There are 575 entries in Table 1, 357 entries for the *bǎ* word, 83 entries for the *gěi* word, and 135 entries for the *ràng* word. Among the 575 entries, 69 entries are marked with left pause, 18 entries with right pause, and 488 entries without any pause. In the corpus, there is no entry with pauses on both edges.

Examples with pause on one edge are provided below. First, the examples with left pause are given in (11) – (13).

- (11)
 NCCU-TM008-CN-FM
 145 F1:
 ..然後..把她們載去新竹
 ..ránhòu
 then

- ..給我找..他說房子給我找
 ..gěi wǒ zhǎo
 GEI 1st.pronoun look.for
- .. tā shuō fángzi gěi wǒ
 3rd.pronoun say house GEI 1st.pronoun
- zhǎo
 look.for
 ‘Let me look for. He said, “Let me look for the house!”’

- (13)
 NCCU-TM010-CN-FF
 103 F2:

- ..還是說...讓她知道說你去哪裡啊
 ..háishì shuō
 or say

- ... ràng tā zhīdào shuō
 RANG 3rd.pronoun know say

- nǐ qù nǎlǐ a
 2nd.pronoun go where particle
 ‘Or, let her know where you go.’

In addition to pauses on the left edge, there are eighteen examples with pauses on the right edge, as in (14) – (16).

- (14)
 NCCU-TM042-CN-MM
 49 M1:

- ..他會把..所有的課上完
 ..tā huì bǎ
 3rd.pronoun will BA
- ..suǒyǒu de kè shàng-wán
 all DE course teach-complete
 ‘He will teach all the courses.’

(15)
NCCU-TM014-CN-FFF
212 F1:

..等我打完再給..給你用
..děng wǒ dǎ-wǎn zài
wait 1st.pronoun play-complete again

gěi
GEI

.. gěi nǐ yòng
GEI 2nd.person use
'Wait for me to finish (the game), and then (it is)
your turn.'

(16)
NCCU-TM008-CN-FM
25 M:

..而且主要是讓..我覺得
..ěrqiě zhǔyào shì ràng
and main COP RANG

.. wǒ juéde
1st.pronoun think
'Mainly, I think that ...'

5 Discussion

This section discusses two issues with regard to the prosodic pause of the *bǎ*, *gěi* and *ràng* words in Taiwan Mandarin: (a) the phonological status of the *bǎ*, *gěi* and *ràng* words, and (b) the general tendency in the X-zì constructions. Table 1 has clearly shown that the majority goes to the situation when there is no pause before or after the *bǎ*, *gěi*, and *ràng* words, and they show a similar tendency, as in Table 2.

Edge X	Left	Right	Both	None	Total
<i>bǎ</i>	10%	4%	0%	86%	100%
<i>gěi</i>	16%	1%	0%	83%	100%
<i>ràng</i>	15%	2%	0%	83%	100%

Table 2: Percentage of the *bǎ*, *gěi*, and *ràng* words in the X-zì constructions

Although the tendencies in the X-zì constructions are similar in Table 2, the *bǎ* word is slightly different from the *gěi* and *ràng* words in the prosodic pause on the edge. Unlike the *gěi* and *ràng* words, the *bǎ* word has a lower percentage on the left edge, but has a higher percentage on the right edge.

In addition to the distributions of prosodic pause in the three X-zì constructions which do not significantly differ from each other, the overall distribution is shown in Table 3. The general tendency in Table 3 suggests that native speakers of Taiwan Mandarin do not favor any pause before or after the *bǎ*, *gěi*, and *ràng* words in the X-zì constructions.

Edge Data	Left	Right	Both	None
Entries	69	18	0	488
Percentage	12%	3%	0%	85%

Table 3: General tendency of the *bǎ*, *gěi*, and *ràng* words in the X-zì constructions

The data in Table 3 also suggest that whenever there is a pause in the X-zì constructions, native speakers prefer the left edge to the right edge, indicating that the *bǎ*, *gěi*, and *ràng* words in the X-zì constructions are phonologically similar. The pattern is shown in (17).

(17) NP₁ + [*bǎ/gěi/ràng* + NP₂ + VP

It becomes apparent that the *bǎ* word is not single out of the adjacent noun phrases, as its syntactic structure suggests. Instead, the *bǎ* word tends to be classified into the following noun.

6 Conclusion

This paper has investigated the prosodic pause of the *bǎ*, *gěi* and *ràng* words in the X-zì constructions in Taiwan Mandarin by looking into spoken data. The results based on corpus data have shown that there is no pause before or after the *bǎ*, *gěi* and *ràng* words. However, when there is a pause, the left edge is preferable to the right edge. The results are summarized in (18) (X = the *bǎ*, *gěi*, and *ràng* words).

- (18) a. NP₁ + X + NP₂ + VP : 85%
 b. NP₁ + [X + NP₂ + VP] : 12%
 c. NP₁ + [X] + NP₂ + VP : 3%
 d. NP₁ + [X] + NP₂ + VP : 0%

The corpus-based approach also confirms the status of the *bǎ*, *gěi*, and *ràng* words, which should be syntactically and phonologically part of the following noun.

In addition to the three major X-zì constructions in Taiwan Mandarin, two issues can be investigated in the future. First, there are other X-zì constructions, such as *zài* ‘in’, *bāng* ‘help’, *tì* ‘replace’, *wèi* ‘for’, and *xiàng* ‘toward’. More constructions should be investigated in the future to add more evidence to support or reject the hypothesis that the X in the X-zì constructions can be prosodically interpreted. The second issue for future research is to compare the phonological statuses of the X-zì constructions in Taiwan Mandarin with those in Beijing Mandarin.

Acknowledgments

Special thanks go to the two reviewers for the comments.

References

- Chang, Li-li. 2001. The Motivations for the Grammaticalization of JIANG and BA. *Humanitas Taiwanica* 55:295-337.
- Chang, Li-li. 2006. The Semantic Development from Causatives to Passives in Chinese. *Language and Linguistics* 7(1):139-174.
- Chen, Hsin-chen. 2015. Using Syntax Trees to Extract Prosodic Phrases in a Prosodic Hierarchy. Master Thesis, National Chung Hsing University.
- Teng, Shou-hsin. 2019. An A to Z Grammar for Chinese Language Learners. Linking Publishing, Taipei.
- Tsai, Yu-ho. 2005. The Extraction of Prosodic Hierarchy in a Mandarin Text-to-speech System. Master Thesis, National Chung Hsing University.
- Tseng, Chiu-yu. 2006. Higher Level Organization and Discourse Prosody. The Second International Symposium on Tonal Aspects of Languages, 23-34.
- Tseng, Chiu-yu. 2008. Corpus phonetic investigations of discourse prosody and higher level information. *Language and Linguistics* 9(3):659-719.

Tseng, Chiu-yu and Chang, Chun-Hsiang. 2008. Pause or No Pause?— Prosodic Phrase Boundaries Revisited. *Tsinghua Science and Technology* 13(4): 500-509.

Tseng, Chiu-yu, Chang, Chun-Hsiang and Su, Zhao-yu. 2005. Investigation F0 Reset and Range in relation to Fluent Speech Prosody Hierarchy. *Technical Acoustics* 24:279-284.

Zellner, Brigitte. 1994. Pauses and the temporal structure of speech, in Eric Keller (Ed.) *Fundamentals of speech synthesis and speech recognition*, 41-62. John Wiley, Chichester.