

Indefinite NPs with Creative- and Destructive-Type
Verbs in Mandarin *Ba* Construction

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Abstract

The *ba* construction in Mandarin is a widely studied topic. It is generally established that *ba* constructions can only be used with definite or bare *ba* NPs. This thesis, however, provides the first systematic exploration of the varying behaviors of *ba* construction with indefinite NPs. It explores *ba* construction's preferences further from the angle of presuppositionality of indefinite *ba* NPs in the context of creative-type and destructive-type verbs, attempting to generalize the exceptions to *ba* construction's rejection of indefinite NPs. Specifically, I propose that while *ba* sentences with creative-type verbs reject indefinite *ba* NPs, such sentences are acceptable with destructive-type verbs. My hypothesis further predicts that the pattern only holds in the perfective aspect but not other aspects such as experiential, durative, and habitual aspects. Those predictions are made based on the common belief that the *ba* construction prefers specific and identifiable *ba* NPs, which also leads to the final prediction that destructive-type verbs intrinsically impose existential presuppositions on the indefinite *ba* NPs, thus making the NPs easier to imagine for the hearer of the sentences, i.e. making it more identifiable. I conducted an experiment to confirm the predictions by distributing acceptability-judgment surveys to native Mandarin speakers. The survey elicits participants' judgments on various *ba* and non-*ba* sentences in different aspects with both creative-type and destructive-type verbs. The results from the experiment offer some confirmation on the grammatical aspects that the pattern can be observed in, the general acceptability of *ba* sentences with indefinite *ba* NPs with destructive-type verbs in the perfective aspect, as well as the intrinsic existential presupposition the destructive-type verbs bring to the indefinite *ba* NPs. However, it is inconclusive as to the unacceptability of such *ba* sentences with creative-type verbs and to the effect of having explicit presupposition on the acceptability of such *ba* sentences with destructive-type verbs. It is the first time that experimental data are used to examine *ba* construction, which adds in the perspective and insight of everyday language use.

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1 Introduction

It is widely accepted that the canonical word order of Mandarin Chinese is SVO (Liu, 2017). Nevertheless, objects are frequently observed to be in the preverbal position to form SOV sentences. Sentences with *ba* constructions are in the SOV word order. They are also a particular type of SOV sentence where an additional word *ba* is inserted in front of the object, signaling that the object is “disposed” or “affected” as described in Huang et al. (2008) and many other sources on *ba* construction. The sentence structure thus becomes NP₁ (i.e. subject) + *ba* + NP₂ (i.e. object or *ba* NP) + VP (Fang & Liu, 2021). The sentences in (1) show an example of a canonical SVO sentence and an equivalent *ba* sentence in Mandarin respectively.

- (1) a. Wo chi-le nage pingguo.
I eat-PFV that apple
'I have eaten that apple.'
- b. Wo **ba** nage pingguo chi-le.
I BA that apple eat-PFV
'I have eaten that apple.'

However, the *ba* construction is not universally applicable. It accepts some verbs or verb phrases and rejects others. Even more interestingly, whether the *ba* NP is definite, specific, or identifiable also seems to affect the acceptability of the sentence. Li (2006) presents detailed accounts on how different forms of verb or verb phrases and different types of *ba* NPs can impose constraints on the usage of *ba* construction and affect the acceptability of *ba* sentences. The sentences in (2) show an example of the varying acceptability of *ba* sentences with different types of *ba* NP, and the contrast between (2-c) and (3-c) is an example of varying acceptability depending on the verb choice.

- (2) a. Wo ba zhe-feng xin xie-le.
I BA this-CL letter write-PFV
'I finished writing this letter'
- b. Wo ba xin xie-le.
I BA letter write-PFV

‘I finished writing the letter.’

- c. *Wo ba yi-feng xin xie-le.
I BA one-CL letter write-PFV
Intended meaning: ‘I finished writing a letter.’

- (3) a. Wo ba zhe-feng xin shao-le.
I BA this-CL letter burn-PFV
‘I burned this letter’
- b. Wo ba xin shao-le.
I BA letter burn-PFV
‘I burned the letter.’
- c. Wo ba yi-feng xin shao-le.
I BA one-CL letter burn-PFV
‘I burned a letter.’

It is established that *ba* construction rejects indefinite *ba* NPs and prefers definite NPs or NPs that have specific and identifiable readings (Li & Thompson, 1981). Many literature discuss *ba* construction’s preferences in terms of its intended notion of affectedness and disposal, i.e. the preferences that *ba* construction have serve the purpose of satisfying (or not satisfying) that notion. Li (2006) furthers the discussion on preferences mostly along the same path. This thesis, however, provides the first systematic exploration of the varying behaviors of *ba* construction with indefinite NPs. It explores *ba* construction’s preferences further from the angle of presuppositionality of indefinite *ba* NPs in the context of creative and destructive verbs, attempting to generalize the exceptions to *ba* construction’s rejection of indefinite NPs. Specifically, I propose the following four-part hypothesis:

1. If the verb in the *ba* sentence is of the type of “destruction,” then *ba* construction is acceptable with indefinite NPs.
2. If the verb in the *ba* sentence is of the type of “creation,” then *ba* construction is unacceptable with indefinite NPs.
3. The reason for such a distinction between creative- and destructive-type verbs is that indef-

inite *ba* NPs have presuppositional readings when used with verbs of the destructive type, which follows *ba* construction's preference for specificity and identifiability.

4. This phenomenon occurs in the perfective aspect with the aspect marker *-le* as the perfective aspect is compatible with the existential presuppositional readings that the destructive-type verbs impose on the indefinite *ba* NPs.

Each part of the hypothesis is first tested using constructed examples based on my intuitions. Then they are tested again, for the first time, using experimental data in order to add in an additional perspective involving speakers' everyday language use. At the end of this paper, I find that although the experiment results offer some confirmation on Parts 1 and 4 of the hypothesis, it is inconclusive as to Parts 2 and 3 of the hypothesis.

Section 2 provides background information on *ba* construction, its preference for definite and identifiable *ba* NPs, and the status of indefinite NPs in *ba* sentences. Section 3 tests the four-part hypothesis proposed in Section 1 using five minimal pairs of creative- and destructive-type verbs, the negation test for presupposition, and *ba* sentences in different grammatical aspects. Section 4 reviews the experiment's methodology and results and provides a discussion on the results. Section 5 concludes this thesis and identifies potential directions for future research.

2 Background

In this section, I provide background on *ba* construction, its features, and the formation of the hypothesis. Section 2.1 introduces *ba* construction's preference for definite and identifiable *ba* NPs. Section 2.2 presents both acceptable and unacceptable cases of indefinite *ba* NPs with in *ba* construction and provides observations on the pattern of the acceptability. Section 2.3 offers an account of the presuppositional and cardinal nature of indefinite NPs and proposes that the observed pattern can be attributed to the presuppositionality of the indefinite *ba* NPs.

2.1 *Ba* Construction's Preference for Definiteness and Identifiability

It is noted in Li & Thompson (1981) that the *ba* NP, which is “[t]he noun phrase following *ba*,” needs to be either “definite” or “generic” for the *ba* sentence to be acceptable. The sentences in (4)-(7) are examples that Li & Thompson (1981) provide to show *ba* construction's such preference. Specifically, the *ba* NP in (4) is a definite NP with the demonstrative *zhei* ‘this’; the *ba* NP in (5) contains a possessor phrase that signifies definiteness; (6) has a bare NP “with no marker of definiteness at all;” and (7) shows a generic NP that refers to the class of salt instead of any specific salt (Li & Thompson, 1981).

(4) kuai yidian ba **zhei** kuai rou na zou
fast a:little BA **this** piece meat take go
‘Take this piece of meat away quickly!’ Li & Thompson (1981), pp. 463

(5) wo bu neng ba **ta de** bimi gaosu ni
I not can BA **3SG GEN** secret tell you
‘I can't tell you his/her secrets.’ Li & Thompson (1981), pp. 464

(6) ta ba **fanting** shoushi ganjing LE
3SG BA **dining:room** tide:up clean PFV/CRS
‘S/He tidied up the dining room.’ Li & Thompson (1981), pp. 464

(7) ta you-de-shihou ba **yan** dang tang chi
3SG sometimes BA **salt** take:as sugar eat
‘S/He sometimes eats salt thinking it's sugar.’ Li & Thompson (1981), pp. 464

Li & Thompson (1981) summarize that the four types of *ba* NPs have the common feature that “they are understood to refer to something about which the speaker believes the hearer knows.” Using the concepts mentioned in Chen (2004) and Ma (2014), what the *ba* NPs in (4)-(7) share is both their specificity and identifiability. When an NP is said to be specific, it means that the speaker knows the object being referred. When an NP is said to be identifiable, it means that the hearer also knows the object being referred. Therefore, what Li & Thompson (1981) propose is that *ba* construction prefers *ba* NPs that are both specific and identifiable.

2.2 Indefinite NPs in *Ba* Construction

When the *ba* NP is indefinite, meaning that the NP has the indefinite form *yi* ‘one’ + CL or the cardinality expression form number + CL, the NP usually “only refer[s] to something particular that the speaker has in mind but about which the hearer does not necessarily know” (Li & Thompson, 1981: 465). In other words, indefinite *ba* NPs appear to violate *ba* construction’s preference for specific and identifiable *ba* NPs, but there are acceptable occasions of indefinite *ba* NPs in *ba* construction that Li & Thompson (1981) note. The sentences in (8) and (9) are two such examples.

(8) wo ba **yi-jian** shi wang LE
I BA **one-CL** matter forget PFV/CRS
‘I forgot something (i.e. something in particular).’ Li & Thompson (1981), pp. 465

(9) you ren ba **yi-ge** zi ca-diao LE
exist person BA **one-CL** character erase-off PFV/CRS
‘Someone erased a (particular) character.’ Li & Thompson (1981), pp. 465

From this point on, however, I will use the verb form in (10) shown below instead. The only difference between the two sentences is that the verb in (10) *ca* ‘erase’ does not have the directional complement *diao* ‘off’. The choice is made to first, keep the form of verbs in all the examples consistent, and second, to contrast with verbs with resultative complement later in the thesis as the resultative complement affects *ba* sentences’ acceptability in the habitual aspect.

(10) you ren ba **yi-ge** zi ca LE
exist person BA **one-CL** character erase PFV/CRS
‘Someone erased a (particular) character.’

Li & Thompson (1981) also acknowledge the rarity of such cases as shown in (8) and (9), noting that “in general, ..., when an object is indefinite, even though it refers to a specific entity, it cannot occur in a *ba* sentence.” Sentences in (11) and (12) are two examples that Li & Thompson (1981) provide for the general unacceptability of indefinite NPs in *ba* construction.

(11) *ta ba **yi-liang** chezi mai-LE
3SG BA **one-CL** car buy-PFV

Intended: ‘S/He bought a car.’

Li & Thompson (1981), pp. 466

- (12) *ta ba **liang-ge** ren sha LE
3SG BA **two-CL** person kill PFV/CRS

Intended: ‘S/He killed two people.’

Li & Thompson (1981), pp. 466

One thing to note about (12) is that I do not agree with the acceptability judgment Li & Thompson (1981) provide for the sentence. Based on my own judgment, (12) is an acceptable sentence, and thus should be presented as in (13).

- (13) ta ba **liang-ge** ren sha LE
3SG BA **two-CL** person kill PFV/CRS
‘S/He killed two people.’

The four examples that Li & Thompson (1981) provide involve the verbs *wang* ‘forget’, *ca* ‘erase’, *sha* ‘kill’, and *mai3* ‘buy’. They are shown in (14) after adapting them for the purpose of this thesis. Specifically, though Li & Thompson (1981) consider some of the *-le* can be interpreted as the Current Relevant State (CRS) marker *le* as well, I only adopt the interpretation of perfective marker for the particle *-le*.

- (14) a. wo ba **yi-jian** shi wang-LE
I BA **one-CL** matter forget-PFV
‘I forgot something (i.e. something in particular).’
- b. you ren ba **yi-ge** zi ca-LE
exist person BA **one-CL** character erase-PFV
‘Someone erased a (particular) character.’
- c. ta ba **liang-ge** ren sha-LE
3SG BA **two-CL** person kill-PFV
‘S/He killed two people.’
- d. *ta ba **yi-liang** chezi mai3-LE
3SG BA **one-CL** car buy-PFV
Intended: ‘S/He bought a car.’

We see that (14-a)-(14-c) are acceptable *ba* sentences with indefinite *ba* NPs while (14-d) is unacceptable. There appears to be a pattern to the acceptability and unacceptability of the *ba*

sentences with indefinite *ba* NPs. All three of the acceptable sentences with indefinite *ba* NPs are ones with verbs of the “destruction” type, meaning that the verbs all have the sense of bringing something that is in existence out of existence, both literally and figuratively. The one sentence that is unacceptable with indefinite *ba* NP has a verb that does the opposite – *mai3* ‘buy’ has the sense of bringing something that is nonexistent into existence.

In Kroch (1974), verbs that “denote events in which something is brought into existence” are called creative verbs. Though *mai3* ‘buy’ differs in that it only figuratively brings something into existence without a “change of state” in the object’s physical form, I loosen up the definition to include verbs like *mai3* ‘buy’ in this thesis. Other work regarding creative verbs include Huang (1996), in which Huang discusses the acceptability of *dou* in sentences with the quantifier *mei* ‘each’ “when the verbs are of the creative type” versus non-creative type. Li (2006) also notes briefly that “no creation verbs are quite compatible with a *ba* NP” (421). Though I do not agree that creation verbs are incompatible with definite and bare NPs as can be seen from (2), I agree with Li’s observation on creation verbs with respect to indefinite NPs. Given the pattern observed in (14), the acceptability of indefinite NPs in *ba* sentences appears to be affected by the verb type, specifically by whether the verbs are of the creative or destructive type.

This observation leads to Parts 1 and 2 of the hypothesis proposed in Section 1 regarding how the type of verbs in *ba* sentences affect their acceptability.

2.3 Presuppositional Indefinites

The third part of the hypothesis regarding the reason for such a distinction between creative- and destructive-type verbs is based on the weak and strong determiners proposed in Milsark (1974) and a third possible reading for multiply-quantified sentences in Diesing (1992). Milsark (1974) categorizes indefinite determiners as weak determiners. Unlike strong determiners and the NPs they form, which can only have presuppositional readings, the indefinite NPs that the indefinite determiners compose can have either presuppositional readings that presuppose the entities’ existence or cardinal readings that only tell about their existence. Diesing (1992) then proposes that for

multiply-quantified sentences, such as the one in (15), there exists a third possible reading besides the two frequently discussed ones, where either all the cellists played the same variations or all of them played a different variation. The third reading has the meaning where there is a preestablished set of variations that all of the cellists have to choose from, and they all played a variation from that set.

(15) Every cellist played some variations.

The third reading that Diesing (1992) discusses is pertinent to the ambiguous readings of indefinite NPs presented in Milsark (1974). Its existence is exactly because of the ambiguity in the interpretation of the weak determiner *some* and the indefinite NP *some variations*. While the reading that all of the cellists played a different variation corresponds to the cardinal reading of indefinite NPs, this third possible reading corresponds to the presuppositional reading of indefinite NPs.

Although in general, indefinite NPs are ambiguous between presuppositional and cardinal readings, the indefinite *ba* NPs in *ba* sentences with destructive-type verbs only have the presuppositional reading. For sentences like those in (14-a)-(14-c), which are repeated here in (16-a)-(16-c), the destructive-type verbs imposes a strong presuppositional reading onto the corresponding indefinite NP. In (16-a), for example, the usage of the verb *wang* ‘forget’ along with the NP *yi-jian shi* ‘a matter’ in the *ba* construction presupposes the existence of at least one matter in the discourse world – its existence is taken for granted when the sentence is uttered by the speaker and leaves room for the hearer’s imagination. The same reasoning applies to *yi-ge zi* ‘a character’ and *liang-ge ren* ‘two people’ in (16-b) and (16-c). For (16-d), on the other hand, the creative type of verb *mai3* ‘buy’ does not impose existential presuppositional readings on its NP.

- (16) a. wo ba yi-jian shi **wang**-LE
 I BA one-CL matter **forget**-PFV
 ‘I forgot something (i.e. something in particular).’
- b. you ren ba yi-ge zi **ca**-LE
 exist person BA one-CL character **erase**-PFV

‘Someone erased a (particular) character.’

- c. ta ba liang-ge ren sha-LE
3SG BA two-CL person kill-PFV

‘S/He killed two people.’

- d. *ta ba yi-liang chezi mai3-LE
3SG BA one-CL car buy-PFV

Intended: ‘S/He bought a car.’

Li (2006) makes note of the necessity for the physical or conceptual forms of the *ba* NPs to exist in order for the *ba* sentences to be acceptable. The idea is similar to the presuppositional readings of the *ba* NPs mentioned above, but Li (2006) only discusses the necessity with respect to the speaker’s world. In my hypothesis, the relative ability for the hearer to imagine the existence, whether physical or conceptual, of the *ba* NPs is considered.

This difference that the two types of verbs makes between the interpretation of the indefinite NPs contributes to the variation in *ba* sentences’ acceptability as it aligns with *ba* construction’s preference for specificity and identifiability. The presuppositional reading of the *ba* NP makes the entity easier to imagine for the hearer of the sentence, thus making it more identifiable.

3 Testing the Hypothesis

In this section, I test the hypothesis proposed in Section 1 by constructing *ba* sentences and providing acceptability judgments based on my intuitions. Section 3.1 uses five minimal pairs of creative- and destructive-type verbs to test Parts 1 and 2 of the hypothesis. Section 3.2 uses the negation test to test the existential presupposition reading of the indefinite *ba* NPs and briefly introduces the purpose of the experiment discussed in Section 4. Section 3.3 tests the hypothesis by using *ba* sentences in experiential, durative, and habitual aspects, namely grammatical aspects other than the perfective aspect in order to justify the necessity of Part 4 of the hypothesis.

3.1 Minimal Pairs

To test Parts 1 and 2 of the hypothesis, I use minimal pairs of antonyms to form sentences with *ba* construction. The minimal pairs include: *mai3* ‘buy’ vs. *mai4* ‘sell’, *xie* ‘write’ vs. *ca* ‘erase’, *xiangqi* ‘remember’ vs. *wang* ‘forget’, *sheng* ‘give birth’ vs. *sha* ‘kill’, and *zhaodao* ‘find’ vs. *diu* ‘lose’. The verbs of the creative type are listed first and then the verbs of the destructive type respectively. Similarly in the testing examples below, the (a) sentences are *ba* sentence with verbs of the creative type, and the (b) sentences are with verbs of the destructive type. Given the hypothesis, I expect the (a) sentences to be unacceptable while the (b) sentences to be acceptable. The five sets of examples in (17)-(21) show sentences consist of the five minimal pairs. All five of them are as expected – the sentences with creative-type verbs are unacceptable in (a), and the sentences with destructive-type verbs are acceptable in (b).

- (17) a. *ta ba yi-liang chezi **mai3**-le.
3SG BA one-CL car **buy**-PFV
Intended: ‘S/He bought a car.’
- b. ta ba yi-liang chezi **mai4**-le.
3SG BA one-CL car **sell**-PFV
‘S/He sold a car.’
- (18) a. *ta ba yi-ge zi **xie**-le.
3SG BA one-CL character **write**-PFV
Intended: ‘S/He wrote a character.’
- b. ta ba yi-ge zi **ca**-le.
3SG BA one-CL character **erase**-PFV
‘S/He erased a (particular) character.’
- (19) a. *ta ba yi-jian shi **xiangqi**-le.
3SG BA one-CL matter **remember**-PFV
Intended: ‘S/He remembered something.’
- b. ta ba yi-jian shi **wang**-le.
3SG BA one-CL matter **forget**-PFV
‘S/He forgot something (in particular).’

- (20) a. *ta ba yi-zhi xiaogou **sheng**-le.
 3SG BA one-CL puppy **give birth**-PFV
 Intended: ‘It gave birth to a puppy.’
- b. ta ba yi-zhi ji **sha**-le.
 3SG BA one-CL chicken **kill**-PFV
 ‘S/He killed a chicken.’
- (21) a. *ta ba yi-tai diannao **zhaodao**-le.
 3SG BA one-CL computer **find**-PFV
 Intended: ‘S/He found a computer.’
- b. ta ba yi-tai diannao **diu**-le.
 3SG BA one-CL computer **lose**-PFV
 ‘S/He lost a computer.’

3.2 Existential Presuppositional Reading of Indefinite *Ba* NPs

The third part of the hypothesis regarding the existential presuppositional reading needs testing as well. I will first perform diagnostic tests below on the *ba* sentences for presuppositions using the negation test. In addition to the negation test, the experiment that I conduct (discussed in detail in Section 4) helps verify the presuppositional readings on indefinite *ba* NPs. In the experiment, there are contrasting scenarios for the perfective *ba* sentences with destructive-type verbs. The scenarios either strongly imply shared knowledge about the *ba* NP between the speaker and the hearer or have no such implication at all. If the *ba* sentences under both scenarios turn out to have higher than average (usage acceptability score greater than 3) acceptability scores, then it would mean that the presuppositional reading on the indefinite *ba* NPs that is intrinsic to the meaning of the sentences is indeed present.

Negation Test for Presupposition

Below, I present the negation test to check for presupposition in the *ba* sentences in (17-b)-(21-b). The negation test for presupposition stipulates that the presupposition in question cannot be false (does not have a contradiction) under both the original sentence and its negation – a

phenomenon that is usually called “constancy under negation” (Huang, 2006: 67). The sets of sentences in (22)-(26) contain the negation test for each of the five *ba* sentences with destructive-type verbs. The (a) sentences are the presuppositions in question. The (b) sentences are the original *ba* sentences. Lastly, the (c) sentences are the negations of the sentences in (b).

- (22) a. ta zhiqian you chezi.
3SG before have car
'S/He had (a) car(s) before.'
- b. ta ba yi-liang chezi **mai4**-le.
3SG BA one-CL car **sell**-PFV
'S/He sold a car.'
- c. ta **meiyou** ba yi-liang chezi **mai4**-diao.
3SG NEG BA one-CL car **sell**-off
'S/He didn't sell a car.'
- (23) a. heiban-shang zhiqian you zi.
blackboard-above before have character
'There were characters on the blackboard.'
- b. ta ba yi-ge zi **ca**-le.
3SG BA one-CL character **erase**-PFV
'S/He erased a character.'
- c. ta **meiyou** ba yi-ge zi **ca**-diao.
3SG NEG BA one-CL character **erase**-off
'S/He didn't erase a character.'
- (24) a. ta jintian you xuyao zuo-de shi.
3SG today have need do-GEN matter
'S/He had something to do today.'
- b. ta ba yi-jian shi **wang**-le.
3SG BA one-CL matter **forget**-PFV
'S/He forgot something (in particular).'
- c. ta **meiyou** ba yi-jian shi **wang**-diao.
3SG NEG BA one-CL matter **forget**-off
'S/He didn't forget anything.'

- (25) a. ta zhiqian you ji.
3SG before have chicken
'S/He had (a) chicken before.'
- b. ta ba yi-zhi ji sha-le.
3SG BA one-CL chicken kill-PFV
'S/He killed a chicken.'
- c. ta meiyou ba yi-zhi ji sha-diao.
3SG NEG BA one-CL chicken kill-off
'S/He didn't kill a chicken.'
- (26) a. ta zhiqian you diannaο.
3SG before have computer
'S/He had (a) computer(s) before.'
- b. ta ba yi-tai diannaο diu-le.
3SG BA one-CL computer lose-PFV
'S/He lost a computer.'
- c. ta meiyou ba yi-tai diannaο diu-diao.
3SG NEG BA one-CL computer lose-off
'S/He didn't lose a computer.'

As we can see from (22)-(26), the presuppositions in question in (a) hold true with both the (b) and (c) sentences, which means that the (a) sentences are indeed presuppositions of the (b) sentences.

3.3 Grammatical Aspects

Given the first three parts of the hypothesis, I expect the following sentences in (27) to follow the pattern exhibited in (17)-(21) as well. However, both of the sentences in (27) are unacceptable as opposed to the expected acceptability of (27-b).

- (27) a. *ta ba yi-liang chezi mai3-guo.
3SG BA one-CL car buy-EXP
Intended: 'S/He has bought a car before.'
- b. *ta ba yi-liang chezi mai4-guo.
3SG BA one-CL car sell-EXP

Intended: ‘S/He has sold a car before.’

The pair of sentences in (27) is presented in the experiential aspect with the aspect marker *guo*, which is different from the grammatical aspect of the sentences in (17)-(21). It appears that the observed pattern of acceptability of indefinite NPs in *ba* sentences does not apply universally in all grammatical aspects. As (17)-(21) show sentences in the perfective aspect with the aspect marker *-le*, a change in the grammatical aspect of the sentences seems to break Parts 1 and 2 of the hypothesis. Therefore, I test sentences in different grammatical aspects other than the perfective aspect below and provide possible reasons for such a deviation, justifying the necessity of Part 4 of the hypothesis. The grammatical aspects that I test include the experiential aspect, the durative aspect, and the habitual aspect. Among the four aspects that are under discussion, the perfective, experiential, and durative aspects are ones that Li & Thompson (1981) discuss extensively and ones that they acknowledge exist in Mandarin.

Experiential Aspect

The experiential aspect is used to indicate “that the event has been experienced at least once” in the past (Li & Thompson, 1981: 226). As shown in (27), the experiential aspect in Mandarin is marked by the suffix *-guo*. Using the rest of the minimal pairs with the experiential aspect, as shown in (28)-(31), we can observe that both the (a) sentences and (b) sentences are unacceptable, which follows the judgment pattern in (27) but violates the one proposed in the hypothesis and exemplified in (17)-(21).

(28) a. *ta ba yi-ge zi **xie**-guo.
3SG BA one-CL character **write**-EXP
Intended: ‘S/He has written a character before.’

b. *ta ba yi-ge zi **ca**-guo.
3SG BA one-CL character **erase**-EXP
Intended: ‘S/He has erased a character before.’

(29) a. *ta ba yi-jian shi **xiangqi**-guo.
3SG BA one-CL matter **remember**-EXP

Intended: ‘S/He has remembered something before.’

- b. *ta ba yi-jian shi wang-guo.
3SG BA one-CL matter forget-EXP
Intended: ‘S/He has forgotten something before.’

- (30) a. *ta ba yi-zhi xiaogou sheng-guo.
3SG BA one-CL puppy give birth-EXP
Intended: ‘It has given birth to a puppy before.’

- b. *ta ba yi-zhi ji sha-guo.
3SG BA one-CL chicken kill-EXP
Intended: ‘S/He has killed a chicken before.’

- (31) a. *ta ba yi-tai diannao zhaodao-guo.
3SG BA one-CL computer find-EXP
Intended: ‘S/He has found a computer before.’

- b. *ta ba yi-tai diannao diu-guo.
3SG BA one-CL computer lose-EXP
Intended: ‘S/He has lost a computer before.’

Given the observations made from (27)-(31), it appears that the previously proposed hypothesis on indefinite NPs and the type of verbs in *ba* sentences does not apply to the experiential aspect.

The essential reason for why the pattern no longer holds in the experiential aspect lies in the existential presuppositional readings that the destruction verbs impose on the indefinite *ba* NPs. In the experiential aspect, the indefinite NPs do not need to be shared knowledge for the speaker and hearer. Intrinsic to the meaning of sentences in the experiential aspect is that the NPs can be any entity in the group. The hearer does not need previous knowledge about the NPs – they are simply hearing about something that has once happened before. Therefore, indefinite NPs in the experiential aspect have cardinal readings as the speaker conveys the mere existence of some entity via the experiential-aspect sentence. Since the presuppositionality of the indefinite *ba* NPs is the key to the acceptability of the *ba* sentences, when the *ba* NPs fail to have such readings, the *ba* sentences become unacceptable.

Durative Aspect

Next, I turn to the durative aspect in Mandarin. This aspect is marked either by the word *zai* or the suffix *-zhe* or both (Li & Thompson, 1981). The durative aspect is used to “signal the ongoing, or durative, nature of an event” (Li & Thompson, 1981). The set of sentences in (32)-(36) are in the durative aspect as they are marked by the suffix *-zhe* and optionally by *zai*. Once again, both the (a) and the (b) sentences are unacceptable in the durative aspect examples like the ones in the experiential aspect ((27)-(31)).

- (32) a. *ta (zai) ba yi-liang chezi **mai3**-zhe.
3SG (DUR) BA one-CL car **buy**-DUR
Intended: ‘S/He is buying a car.’
- b. *ta (zai) ba yi-liang chezi **mai4**-zhe.
3SG (DUR) BA one-CL car **sell**-DUR
Intended: ‘S/He is selling a car.’
- (33) a. *ta (zai) ba yi-ge zi **xie**-zhe.
3SG (DUR) BA one-CL character **write**-DUR
Intended: ‘S/He is writing a character.’
- b. *ta (zai) ba yi-ge zi **ca**-zhe.
3SG (DUR) BA one-CL character **erase**-DUR
Intended: ‘S/He is erasing a character.’
- (34) a. *ta (zai) ba yi-jian shi **xiangqi**-zhe.
3SG (DUR) BA one-CL matter **remember**-DUR
Intended: ‘S/He is remembering something.’
- b. *ta (zai) ba yi-jian shi **wang**-zhe.
3SG (DUR) BA one-CL matter **forget**-DUR
Intended: ‘S/He is forgetting something.’
- (35) a. *ta (zai) ba yi-zhi xiaogou **sheng**-zhe.
3SG (DUR) BA one-CL puppy **give birth**-DUR
Intended: ‘It is giving birth to a puppy.’
- b. *ta (zai) ba yi-zhi ji **sha**-zhe.
3SG (DUR) BA one-CL chicken **kill**-DUR
Intended: ‘S/He is killing a chicken.’

- (36) a. *ta (zai) ba yi-tai diannaο **zhaοdao-zhe**.
 3SG (DUR) BA one-CL computer **find-DUR**
 Intended: ‘S/He is finding a computer.’
- b. *ta (zai) ba yi-tai diannaο **diu-zhe**.
 3SG (DUR) BA one-CL computer **lose-DUR**
 Intended: ‘S/He is losing a computer.’

In the section on *the X Factor* in Li (2006), the durative aspect marker *-zhe* is listed as one of the X factors that is frequently used to make the *ba* verb non-bare so that the *ba* construction can be acceptable. An example is shown in (37).

- (37) a. qing ba ta bao-**zhe**.
 please BA 3SG hold-**DUR**
 ‘Please hold it/him/her.’
- b. *qing ba ta bao.
 please BA 3SG hold
 Intended: ‘Please hold it/him/her.’

However, this aspect marker is only compatible with certain verbs. Li (2006) notes that the verbs that are compatible with *-zhe* take the aspect marker to mark “an end-state that continues.” The verb *bao* ‘hold’ in (37) is one such verb. The verbs in the minimal pairs, on the other hand, either “do not have the ‘path-end-state’ interpretation” and take *-zhe* to mark progressive state or cannot have continuous or progressive interpretation at all. The verbs in (32), (33), and (35) fit the former description. The verbs in (34) and (36) fit the latter description.

Regardless, the verbs in the minimal pairs are not compatible with the durative aspect, and without the aspect marker *-zhe* as the X factor, the *ba* sentences cannot be acceptable.

Habitual Aspect

The last grammatical aspect I test is the habitual aspect, which is not discussed in Li & Thompson (1981). The possible reason is that Mandarin does not have aspectual markers for the habitual aspect (Wang, 2012). Klein et al. (2000) term sentences lacking aspectual markers “‘zero marking’ sentences,” noting that “aspectual particles are not obligatory in Chinese,” and that the “illocution-

ary status of the sentence will [then] depend completely on pragmatic or contextual factors.” An example is shown in (38). In this thesis, I construct sentences that indicate habitual meanings using the phrase *mei-tian* ‘every day’ for the purpose of making the habitual readings clear and explicit.

- (38) Ta (xingqitian) xi yifu.
 he (Sunday) wash clothes
 ‘He washes clothes (on Sundays).’ Klein et al. (2000), pp. 765

The sets of sentences in (39)-(41) show that both the (a) and the (b) sentences are unacceptable, regardless of the type of verb. This pattern, again, violates the one in the perfective aspect and the hypothesis.

- (39) a. *ta mei-tian ba yi-liang chezi **mai3**.
 3SG every-day BA one-CL car **buy**
 Intended: ‘S/He buys a car every day.’
 b. *ta mei-tian ba yi-liang chezi **mai4**.
 3SG every-day BA one-CL car **sell**
 Intended: ‘S/He sells a car every day.’
- (40) a. *ta mei-tian ba yi-ge zi **xie**.
 3SG every-day BA one-CL character **write**
 Intended: ‘S/He writes a character every day.’
 b. *ta mei-tian ba yi-ge zi **ca**.
 3SG every-day BA one-CL character **erase**
 Intended: ‘S/He erases a character every day.’
- (41) a. *ta mei-tian ba yi-jian shi **xiangqi**.
 3SG every-day BA one-CL matter **remember**
 Intended: ‘S/He remembers something every day.’
 b. *ta mei-tian ba yi-jian shi **wang**.
 3SG every-day BA one-CL matter **forget**
 Intended: ‘S/He forgets something every day.’
- (42) a. *ta mei-tian ba yi-zhi xiaogou **sheng**.
 3SG every-day BA one-CL puppy **give birth**

Intended: ‘It gives birth to a puppy every day.’

- b. *ta mei-tian ba yi-zhi ji sha.
3SG every-day BA one-CL chicken kill

Intended: ‘S/He kills a chicken every day.’

- (43) a. *ta mei-tian ba yi-tai diannao zhaodao.
3SG every-day BA one-CL computer find

Intended: ‘S/He finds a computer every day.’

- b. *ta mei-tian ba yi-tai diannao diu.
3SG every-day BA one-CL computer lose

Intended: ‘S/He loses a computer every day.’

As discussed above, *ba* verbs require an X factor to be non-bare and be compatible with the *ba* construction. As we can observe from (39)-(43), since the habitual aspect does not have an aspect marker, there is no X factor to make the *ba* verbs non-bare. Therefore, sentences in the habitual aspect are not compatible with the *ba* construction in the first place.

After examining the sets of sentences in (27)-(31), (32)-(36), and (39)-(43), we observe that sentences in the experiential, durative, and habitual aspects do not follow Parts 1 and 2 of the hypothesis. For the durative and habitual aspect, the reason is that these aspects are not compatible with the *ba* construction in the first place due to the lack of or incompatibility with the required X factor. Therefore, we do not need to take them into consideration here. For the experiential aspect, on the other hand, the issue lies in the existential presuppositional readings of the indefinite *ba* NPs, which is the essential factor that contributes to the acceptability of *ba* sentences with indefinite *ba* NPs when the verbs are of the destructive type. Destructive verbs in the perfective aspect (example sentences in (17)-(21)) can successfully impose presuppositional readings on the indefinite *ba* NPs whereas the indefinite NPs lack this interpretation with destructive verbs in the experiential aspect, thus making the (b) sentences in the sets of examples above unacceptable as well. With the observations mentioned above, it is necessary to include Part 4 of the hypothesis to add in a restriction on the grammatical aspect where the pattern in Parts 1 and 2 can hold.

4 Experiment

This section goes over the experiment conducted to confirm the hypothesis by eliciting native speakers' judgments on various *ba* and non-*ba* sentences. The experiment contains the same sentences presented in (17)-(21), (27), (30), (32), (33), (40), and (43). The reason why the experiment is essential for confirming the hypothesis in addition to the acceptability judgments I provide in Section 3 is that I expect variations in judgments among a wider population of native Mandarin speakers and would like to explore the implications of those variations. While I am only able to provide dichotomous acceptability judgments on the example sentences in Section 3, the results from the experiment reflect the extent to which the participants found the sentences acceptable or unacceptable. The varying degree in acceptability judgments shows that language usage in everyday life is more complicated than the dichotomy depicted in syntactic theories. Section 4.1 introduces the research methods used to design the experiment and the breakdown of the question types in the experiment. In Section 4.2, I report the results of the experiment, including the demographic makeup of the participant pool and the statistics from participants' responses to the usage acceptability questions. Finally, Section 4.3 discusses the results presented in Section 4.2 by considering the characteristics exhibited by the data and the shortcomings of the experiment.

4.1 Methods

The experiment was conducted in the format of a 36-question anonymous rating questionnaire, among which four questions were demographic questions and 31 were usage acceptability questions (the usage acceptability questions were randomized manually). The questionnaire was distributed to my friends, family, and friends' friends, and it was open for a week gathering responses from them. The demographic questions asked about participants' age range, hometown region, number of languages spoken besides Mandarin Chinese (excluding other varieties of Chinese, e.g. dialects), and education level. The usage acceptability questions were each presented with a brief scenario followed by a short conversation between two people, and the sentence of

interest was highlighted in blue. Participants were asked to provide usage acceptability scores on these highlighted sentences. Usage acceptability was defined as the extent to which you could reasonably expect someone else using it in a conversation with you without you feeling confused (在何种程度上您可以合理预期在日常对话中听到该句子且不会感到意外或困惑). The scores were presented on a scale from 1 to 5, where 1 = usage completely unacceptable (完全不认同) and 5 = usage completely acceptable (完全认同). Among the 31 usage acceptability questions, four of them served the purpose of control, meaning that they were constructed in a way that native speakers of Mandarin should find them acceptable (i.e. provide a score of 4 or 5). These questions help identify and filter out responses from unreliable participants before data analysis. The full list of questions, both the original and translated version in English, is available in Appendix B.

I adapted the rating scale used by Lee (2016) in her experiment on subject case ellipsis in Korean. Lee (2016: 96) explains that the major advantage of using a rating scale versus dichotomous answer choices (i.e. acceptable vs. unacceptable) is that a rating scale “provides more sensitive and precise information about the relative goodness of sentences.” While Lee (2016) asks participants to write a score between 1 and 5, I chose to present the rating scale in multiple-choice format and asked participants to choose from one of the options. The advantage of the multiple-choice format is that it automatically limits the type of answers collected.

Li & Thompson (1981) also note such a scale-like pattern specifically regarding how *ba* construction’s necessity changes as the type of objects changes. They provide a continuum of four levels: impossible, unlikely, likely, and obligatory, which shows that the acceptability of *ba* sentences is more complicated than a dichotomy. I believe that, even without the variability in the type of objects, the continuum still applies to *ba* sentences in general.

In the experiment, a total of 118 people participated. Since the system sets all the questions as required, there were no incomplete responses. Using the four control questions (Q22, Q29, Q33, Q36), data from participants whose answers to any one of them were 3 or below were removed. Given this criterion, 38 participants’ data were excluded, leaving 80 sets of responses in the dataset.

The usage acceptability questions asked for acceptability ratings on sentences in four gram-

matical aspects – perfective, experiential, durative, and habitual aspects. For the latter three grammatical aspects, the sentences consist of two of the minimal pairs mentioned in Section 3.1. For the perfective aspect, the sentences consist of all five of the minimal pairs. In particular, the sentences with destructive-type verbs were each tested twice. In order to verify that the existential presuppositional reading is intrinsic to the meaning of the sentences, I constructed two scenarios for each *ba* sentence with destructive-type verbs in the perfective aspect. One scenario strongly implied that the *ba* NP is known to both the speaker and the hearer, while the other provided no such implication at all. All 31 sentences used in the experiment are in Appendix B with English translation.

4.2 Results

Demographic Questions

Of the 80 participants, 49 of them (61.3%) are between ages 18-25. The reason that this age group makes up more than half of the total participants is that the survey was distributed to my friends and family and friends' friends, among which most are college-age people. 12 participants (15%) are in the age group of 46-55, which is the next most represented in this sample followed by 8 participants (10%) between ages 36-45, 6 participants (7.5%) below 18, 4 (5%) between ages 26-35, and 1 (1.3%) above 65. There was no one in the age group of 56-65. For the distribution of education level, 70% of the participants either have received a Bachelor's degree or are in progress of receiving a Bachelor's degree, making "Bachelor's" the most represented education level in the sample. In the distribution of participants' hometown region, there is also an imbalance where 73.8% are from the Southern part of China, making up the majority of the data. The disparity we see in participants' hometown region can potentially be attributed to the fact that my family is from the Southern part. It is also not surprising to see that every participant (100%) speak at least one language besides Mandarin. Detailed distribution of the answers to the demographic questions are in Appendix A.

The mean and standard deviation (SD) are taken on the results of each usage acceptability

question (Q6-Q36). The SDs are taken in order to see how much variation there is among the results which help add an additional layer of meaning beyond the means. Results are presented according to the hypothesis proposed in Section 1 (the means are bolded).

Questions with Destructive-Type Verbs in Perfective Aspect

Among the 31 usage acceptability questions, 10 of them are questions on perfective aspect *ba* sentences with the destructive-type verbs (Q8, Q13, Q16, Q18, Q21, Q23, Q28, Q30, Q31, and Q34). Among the 10 questions, Q8, Q18, Q21, Q28, and Q30 are ones that have scenarios strongly implying mutual knowledge of the *ba* NP. Their means and SDs are, respectively, **4.25** \pm 1.01, **4.50** \pm 0.87, **4.50** \pm 0.83, **4.14** \pm 1.16, **4.59** \pm 0.67. The other five questions, Q13, Q16, Q23, Q31, and Q34 are ones that do not have such implications. Their means and SDs are **4.33** \pm 1.00, **4.38** \pm 0.92, **3.61** \pm 1.52, **4.73** \pm 0.64, and **3.78** \pm 1.34 respectively. Q8 and Q31 (*diu* ‘lose’), Q13 and Q30 (*wang* ‘forget’), Q16 and Q18 (*mai4* ‘sell’), Q21 and Q34 (*sha* ‘kill’), Q23 and Q28 (*ca* ‘erase’) are question sets that contain the same destructive-type verb respectively. The means for the scenarios with presuppositions are mostly higher than the ones with no presuppositions, but the range of the means is wider for those with no presuppositions as there are more variations within individual scenarios. The ranges of the SDs appear to be about the same between the two groups – both types of scenarios show some variations within individual scenarios.

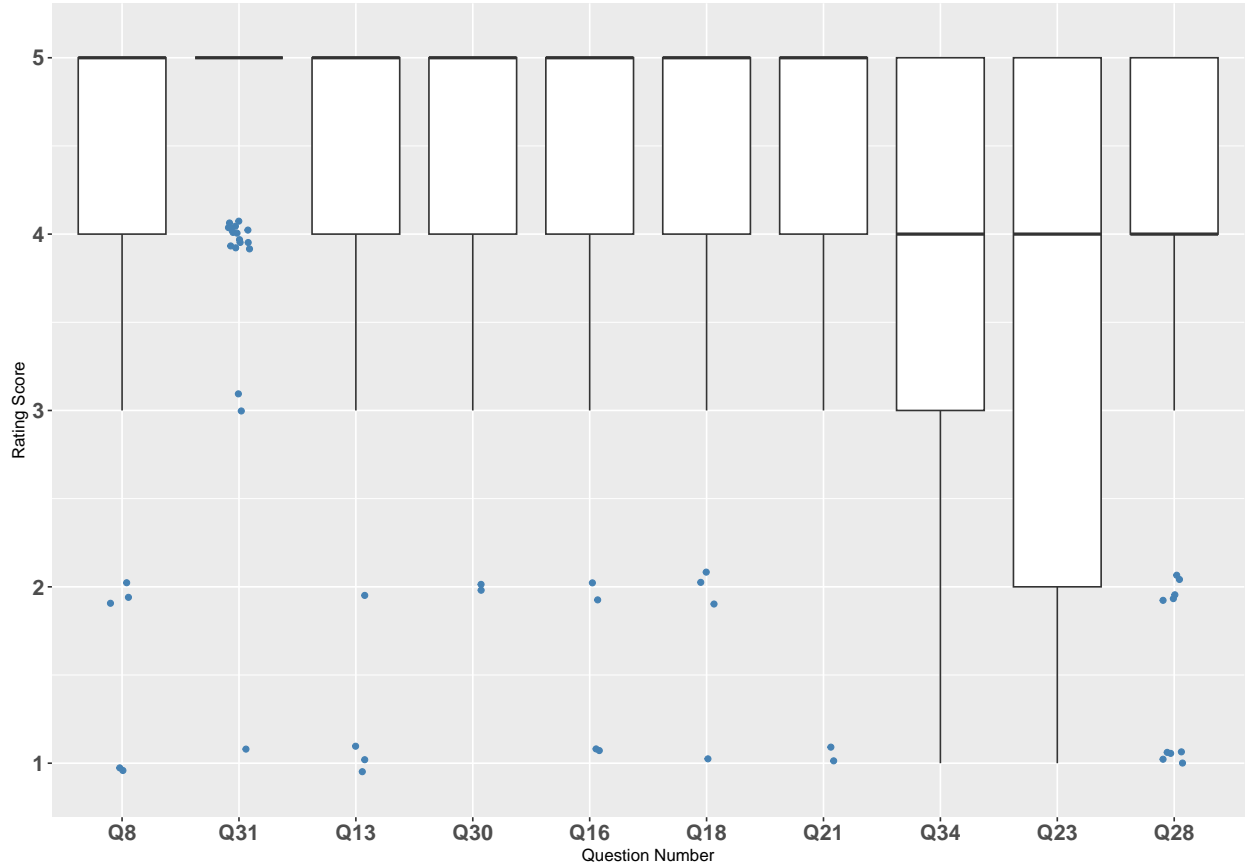


Figure 1: Boxplots for questions with destructive-type verbs in perfective aspect (outliers are shown as solid blue dots); from left to right: *diu* ‘lose’ (Q8, Q31), *wang* ‘forget’ (Q13, Q30), *mai4* ‘sell’ (Q16, Q18), *sha* ‘kill’ (Q21, Q34), *ca* ‘erase’ (Q23, Q28) (The leftmost questions of the pairs are with presuppositions, and the rightmost ones are without presuppositions)

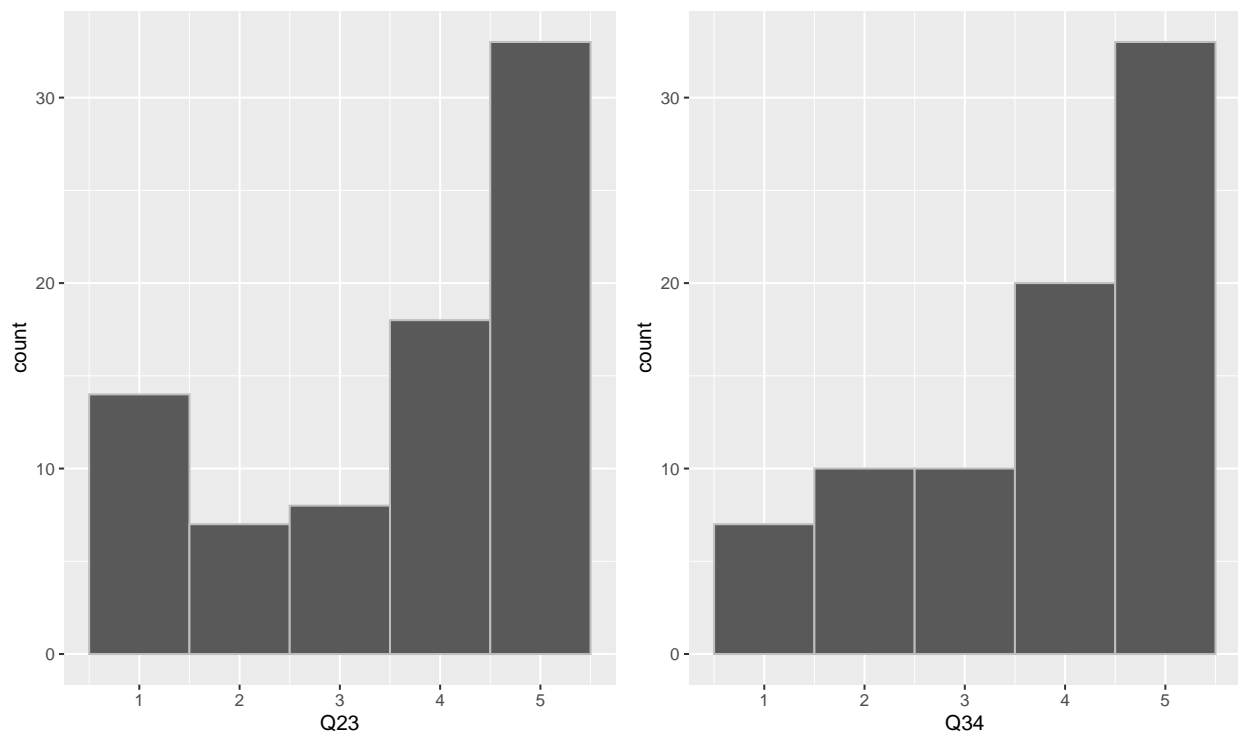


Figure 2: Histograms for Q23 (*ca* ‘erase’) and Q34 (*sha* ‘kill’) in perfective aspect with no presupposition, showing number of responses for each rating score

Table 1: Comparison of Means and SDs Between Questions With and Without Presuppositions

	Presupposition			No Presupposition		
<i>diu</i> ‘lose’	Q8	4.25	± 1.01	Q31	4.73	± 0.64
<i>wang</i> ‘forget’	Q30	4.59	± 0.67	Q13	4.33	± 1.00
<i>mai4</i> ‘sell’	Q18	4.50	± 0.87	Q16	4.38	± 0.92
<i>sha</i> ‘kill’	Q21	4.50	± 0.83	Q34	3.78	± 1.34
<i>ca</i> ‘erase’	Q28	4.14	± 1.16	Q23	3.61	± 1.52

Questions with Creative-Type Verbs in Perfective Aspect

There are five questions on perfective aspect *ba* sentences with creative-type verbs (Q10, Q14, Q15, Q20, and Q26). Their means and SDs are 2.04 ± 1.11 , 3.51 ± 1.33 , 1.54 ± 0.78 , 3.19 ± 1.37 , and 2.25 ± 1.33 respectively. Their means have a wider range along with overall larger SDs compared

to those of the questions on destructive-type verbs.

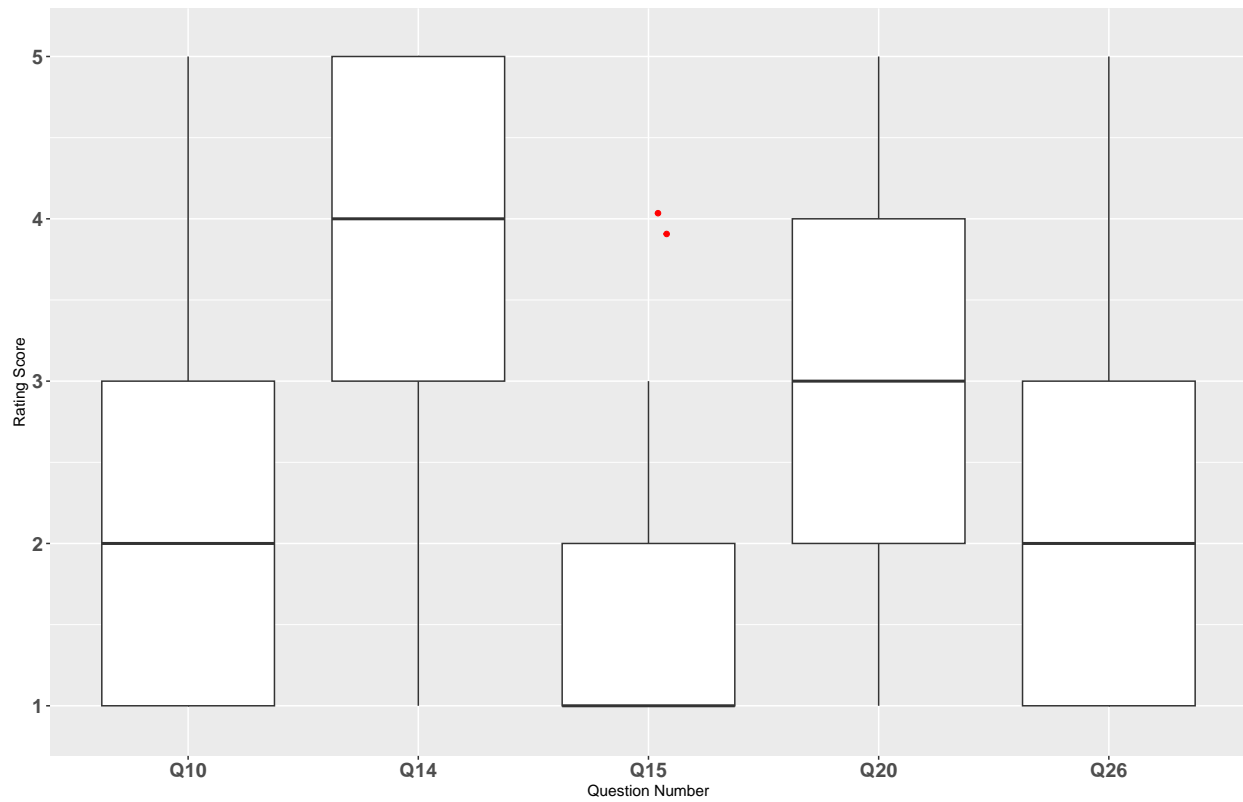


Figure 3: Boxplots for questions with creative-type verbs in perfective aspect (outliers are shown as solid red dots); from left to right: *xiangqi* ‘remember’ (Q10), *zhaodao* ‘find’ (Q14), *sheng* ‘give birth’ (Q15), *mai3* ‘buy’ (Q20), *xie* ‘write’ (Q26)

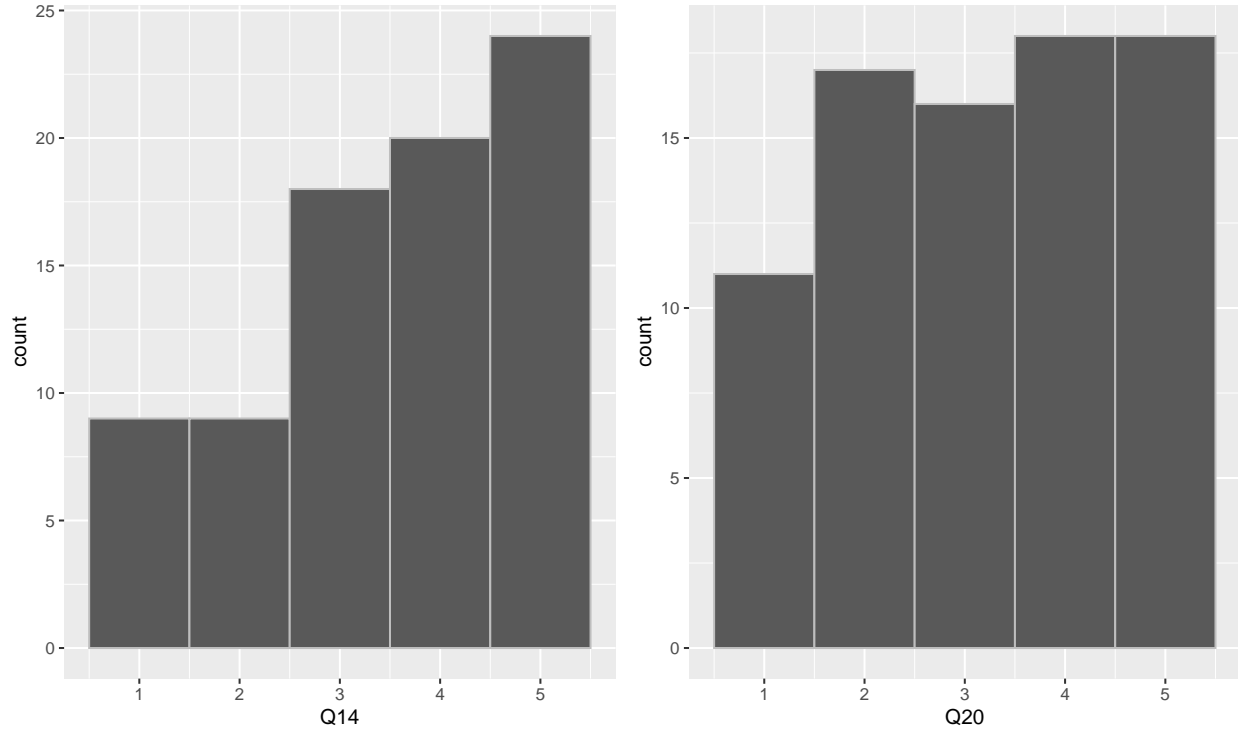


Figure 4: Histograms for Q14 (*zhaodao* 'find') and Q20 (*mai3* 'buy') in perfective aspect, showing number of responses for each rating score

Questions in Experiential, Durative, and Habitual Aspects

To test part of my hypothesis, *ba* sentences with indefinite *ba* NPs in experiential, durative, and habitual aspects were also tested with both creative and destructive verb types. Questions with *ba* sentences in experiential aspect are Q7, Q9, Q11, and Q32. Their means and SDs are **2.05 ±1.23**, **1.28 ±0.69**, **1.68 ±0.91**, and **1.85 ±1.09** respectively.

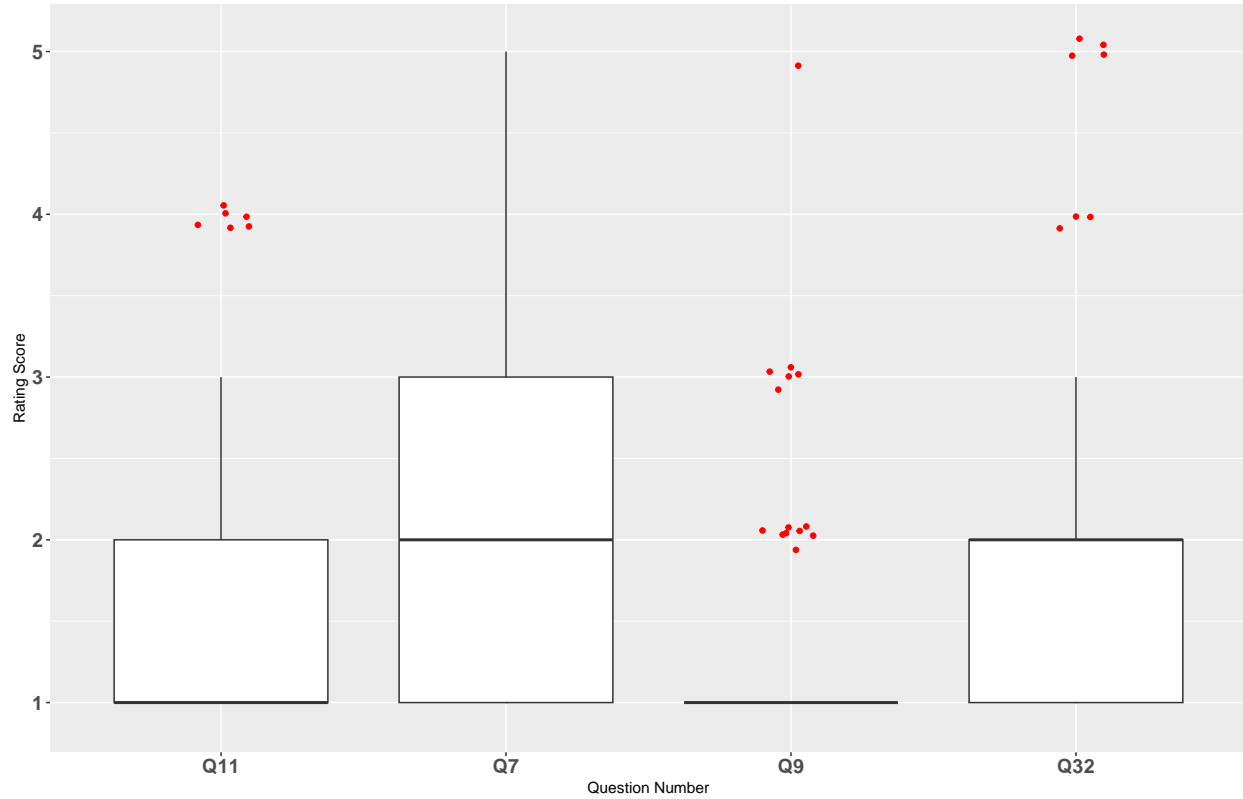


Figure 5: Boxplots for questions in experiential aspect (outliers are shown as solid red dots); from left to right: *mai3* ‘buy’ (Q11) vs. *mai4* ‘sell’ (Q7), *sheng* ‘give birth’ (Q9) vs. *sha* ‘kill’ (Q32)

Questions with *ba* sentences in durative aspect are Q12, Q19, Q24, and Q27. Their means and SDs are, respectively, **1.31** \pm 0.69, **1.38** \pm 0.68, **1.39** \pm 0.77, and **1.49** \pm 0.87.

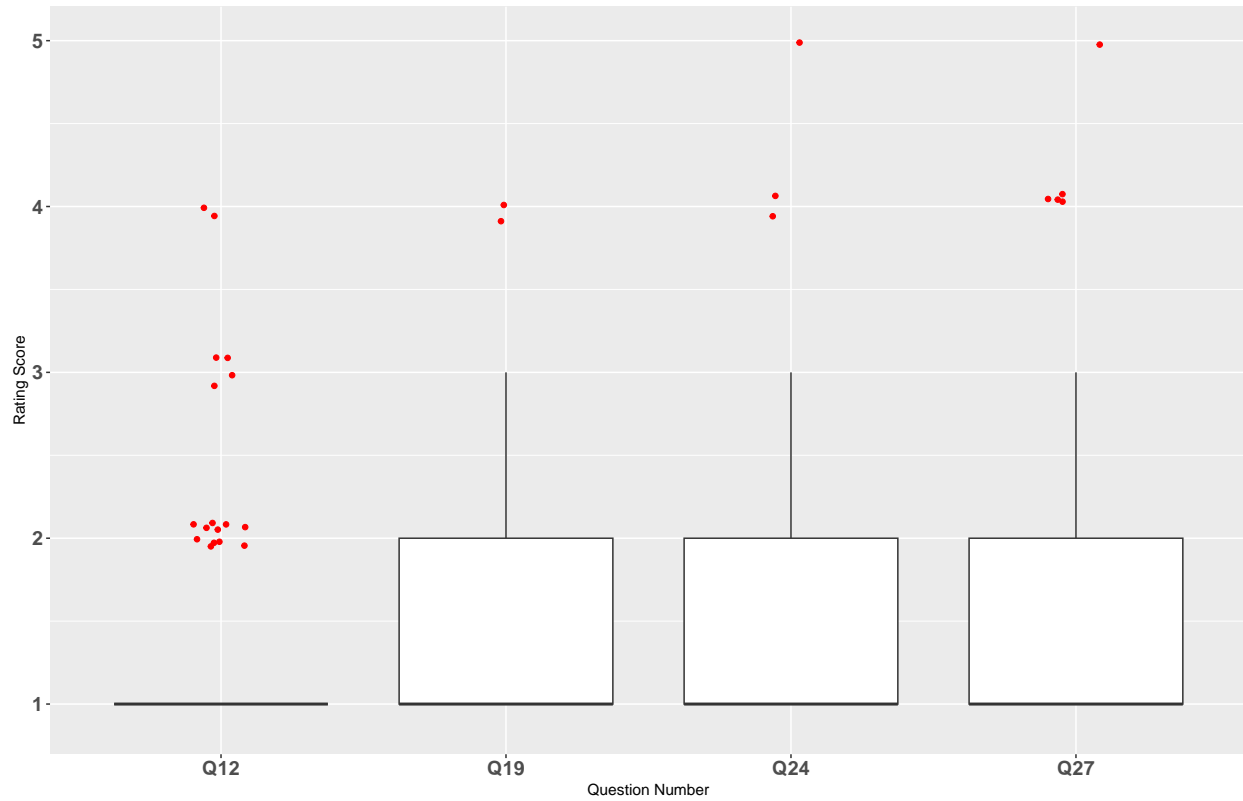


Figure 6: Boxplots for questions in durative aspect (outliers are shown as solid red dots); from left to right: *xie* ‘write’ (Q12) vs. *ca* ‘erase’ (Q19), *mai3* ‘buy’ (Q24) vs. *mai4* ‘sell’ (Q27)

Questions with *ba* sentences in habitual aspect are Q6, Q17, Q25, and Q35. Their means and SDs are, **1.30** \pm 0.72, **1.55** \pm 1.02, **1.36** \pm 0.85, and **1.51** \pm 0.89 respectively.

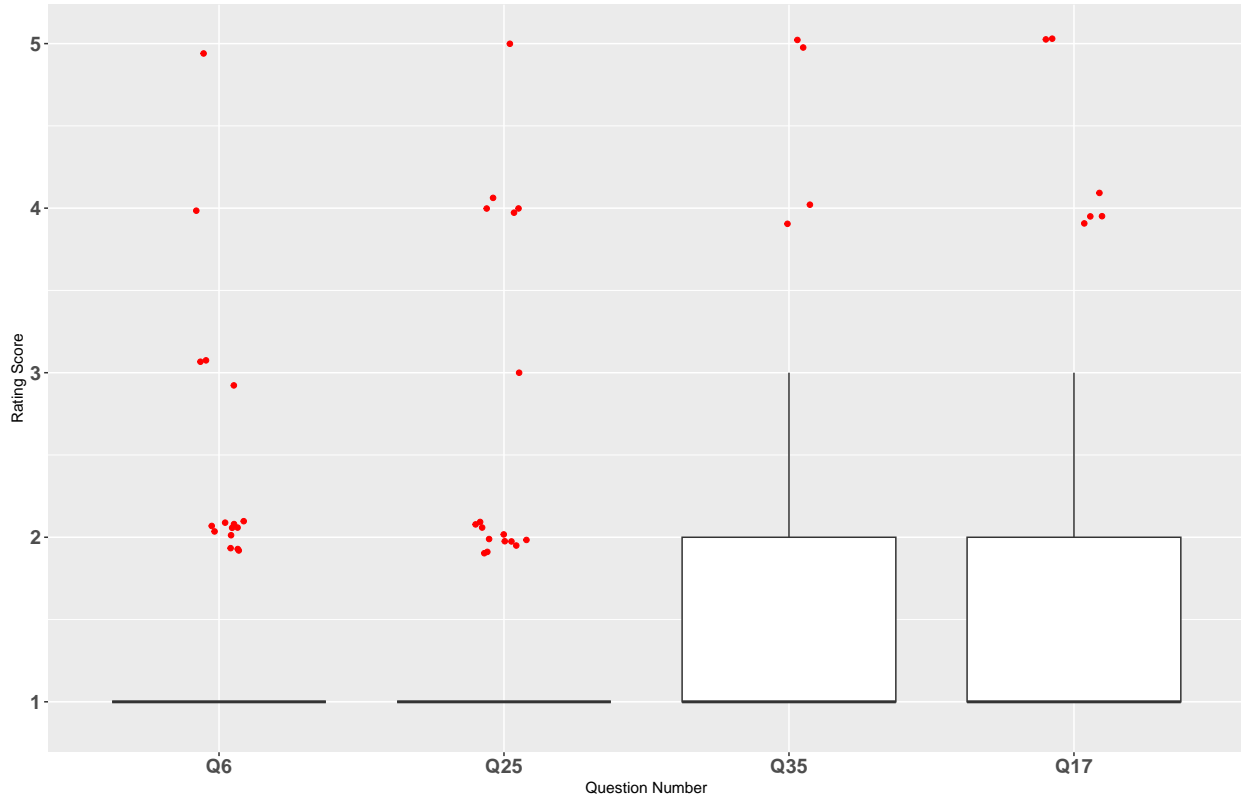


Figure 7: Boxplots for questions in habitual aspect (outliers are shown as solid red dots); from left to right: *xie* ‘write’ (Q6) vs. *ca* ‘erase’ (Q25), *zhao* ‘find’ (Q35) vs. *diu* ‘lose’ (Q17)

Overall, the means demonstrate that the sentences in all three of these aspects were dispreferred by the participants to about the same extent. Nevertheless, slightly larger SDs can be observed in sentences in the experiential aspect.

Control Questions

The four control questions in the experiment are Q22, Q29, Q33, and Q36. Their means and SDs are 4.98 ± 0.16 , 4.73 ± 0.45 , 4.95 ± 0.22 , and 4.81 ± 0.39 respectively. Note here again that all responses ≤ 3 were removed, leaving only responses of 4 and 5. Figure 8, which plots the distributions without removing any responses, shows that for all four questions, responses of 1 and 2 are outliers. For two of the questions (Q22 and Q33), responses of 3 are outliers as well, and for the other two questions (Q29 and Q36), responses of 3 are below the 25th percentile. Therefore, the distributions with all responses included largely support the criterion used to remove data, and

it is not surprising that the means of the four control questions are all very close to 5 with low SDs after removing the data accordingly. The distributions can be verified by Figure 9.

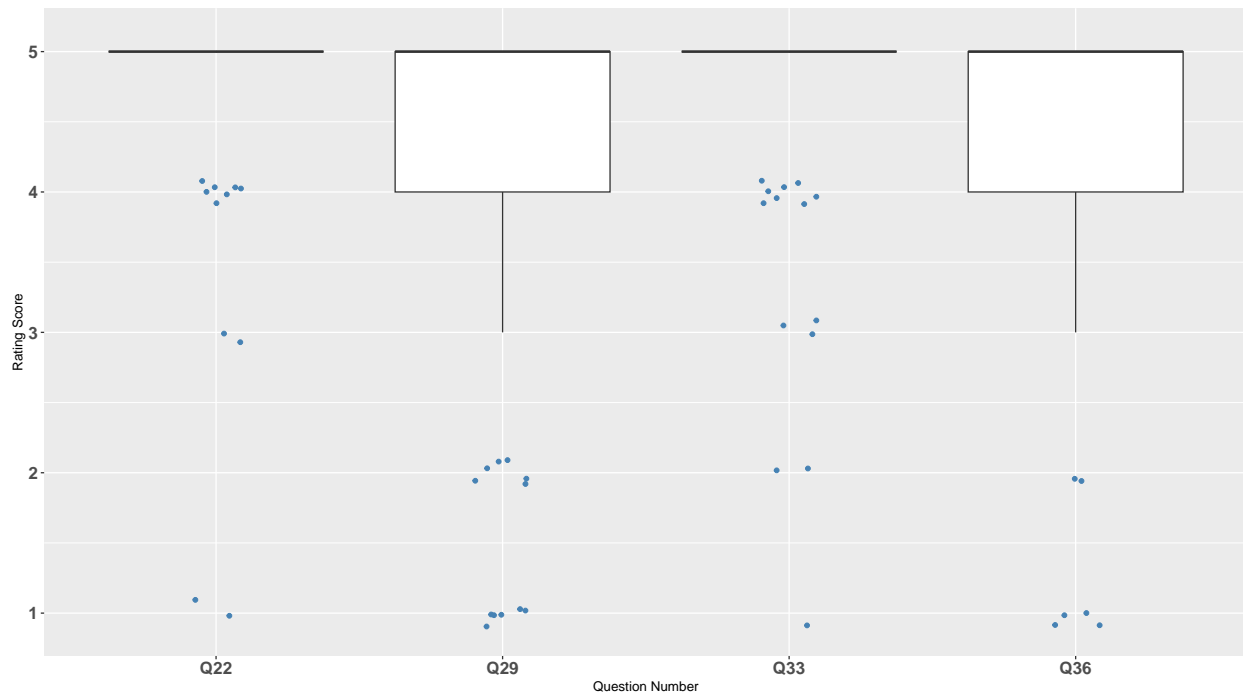


Figure 8: Boxplots for control questions without removing any responses (outliers are shown as solid blue dots)

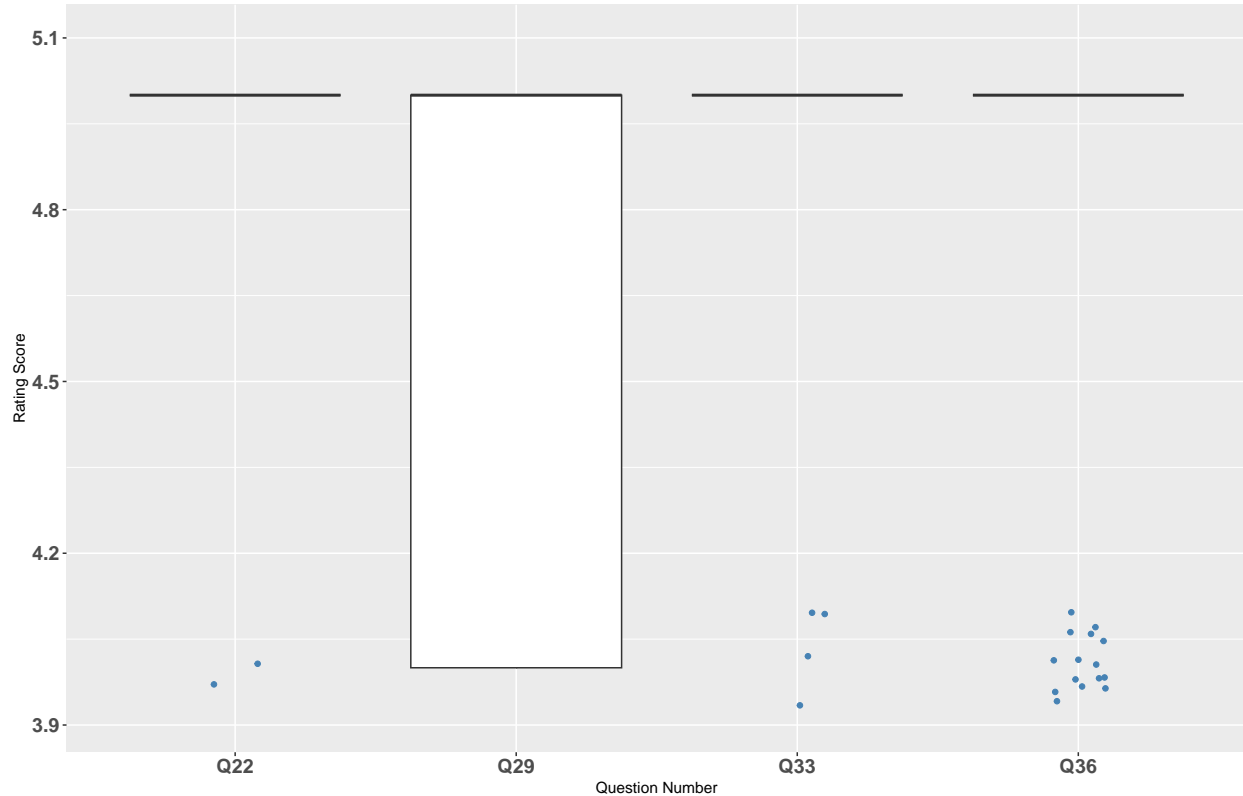


Figure 9: Boxplots for control questions with responses ≤ 3 removed (outliers are shown as solid blue dots)

4.3 Discussion

This section discusses the results presented in Section 4.2.

According to Parts 1 and 4 of the hypothesis presented in Section 1, I predict that when used with destructive-type verbs in the perfective aspect, *ba* sentences with indefinite *ba* NPs should be acceptable (with a rating score above 3). As can be observed from the results presented in Section 4.2, most of them, in fact, have a mean above 4, and all of the results match with the prediction. It is worth pointing out, though, that Q23 and Q34, which correspond to the destructive verbs *ca* ‘erase’ and *sha* ‘kill’ respectively, both have average rating scores above 3 but below 4. The scores mean that the participants, in general, still found the sentences to be more acceptable than unacceptable but only moderately so. The relatively large SDs, 1.52 and 1.34 respectively, also demonstrates that there is relatively large variation among the ratings for these two questions, indicating that the

participants provided ratings that are more spread out. The boxplots in Figure 1 show that Q23 and Q34, the two questions that received moderate acceptability, have wider distributions compared to the other 8 questions. The ranges from the first quartile to the third quartile are shown to be much larger for Q23 and Q34. Another notable feature is that answers of 1 and 2 are not considered outliers for these two questions, while they are outliers for all the other 8 questions. From the histograms for the answers to Q23 (*ca* ‘erase’) and Q34 (*sha* ‘kill’) in Figure 2, we see that the participants had differing judgments on these two questions with a considerable number of answers (more than expected) on the lower side of the scale. In particular, the histogram for Q23 appears slightly bimodal as a small peak can be observed at 1 and another peak at 5. The participants seem to be split between the two sides of the scale, finding the sentence either completely acceptable or completely unacceptable. The reason for this observed pattern, however, is unclear – there is not an obvious explanation for why Q23 stands out from the rest of the 9 questions.

According to Parts 2 and 4 of the hypothesis, I predict that when used with verbs of the creative types in the perfective aspect, *ba* sentences with indefinite *ba* NPs should be unacceptable (with a rating score below 3). The results from the five questions with creative-type verbs in the perfective aspect show that three out of five sentences align with the prediction. Q14 and Q20 (with creative verbs *zhaodao* ‘find’ and *mai3* ‘buy’ respectively) are exceptions, both with means above 3, indicating that the participants, on average, found the sentences to be more acceptable than unacceptable, which contradicts the prediction. The boxplots in Figure 3 provide more direct visualizations of the distributions of the five questions. It can be observed that Q14 stands out from the five questions. Its distribution is similar to the ones in Figure 1 for questions on destructive-type verbs. Its histogram in Figure 4 also shows that there are significantly more responses toward the acceptable side of the scale than the unacceptable side, meaning that on average, the participants found the sentence in Q14 to be more acceptable than unacceptable. While the distribution of Q20 is not as extreme as that of Q14, both its boxplot and its histogram (in Figure 3 and 4 respectively) show that the responses have a pretty even distribution among the five rating scores, thus indicating that the participants have very disparate opinions toward Q20. Looking at the distributions of the

five questions together, we see that the sentences with creative-type verbs are overall more controversial compared to questions with destructive-type verbs because except for Q15, the ranges of from the first quartile to the third quartile are all relatively wide. One potential reason for this observed pattern lies in the influence from Shanghainese, which could make the *ba* sentences with creative-type verbs sound more acceptable to those who speak the dialect. Given that this survey was distributed to my friends, family, and their friends, and my family is from Shanghai, it is reasonable to believe that there is a significant number of participants from Shanghai, some of whom possibly speak Shanghainese. As a speaker of Shanghainese myself, I acknowledge the hesitation to assign unacceptability to the sentences in Q14 and Q20 when I am under the influence of Shanghainese, e.g. right after having a conversation in Shanghainese. It is in contrast with the certainty I have from a strict Mandarin perspective. For the Shanghainese speakers among the participants, there could be a similar effect from Shanghainese leading to variations in judgments.

Part 4 of the hypothesis also predicts that although *ba* sentences in the perfective aspect would follow the pattern in Parts 1 and 2, sentences in aspects like experiential, durative, and habitual would not. I included *ba* sentences in the latter three aspects with both verbs of the destructive and creative types in the experiments in order to seek confirmation (experiential: Q7, Q9, Q11, Q32; durative: Q12, Q19, Q24, Q27; habitual: Q6, Q17, Q25, Q35). The results presented in Section 4.3 show that all but one of the average rating scores are below 2, with the one exception (Q7) only slightly exceeding 2. The results thus match the prediction that regardless of the type of verbs, *ba* sentences in experiential, durative, and habitual aspects are generally not acceptable. As alluded to in the hypothesis, unlike the perfective aspect, experiential, durative, and habitual aspects are not compatible with existential presuppositional readings given the nature of the meanings these aspects convey. Therefore, it is not surprising that the prediction is confirmed by participants' judgments from the experiment. Figures 5, 6, and 7 show the distributions of the responses for sentences in experiential, durative, and habitual aspects respectively. All of the distributions, except for that of Q7 (*mai4* 'sell' in experiential aspect), are extremely skewed toward the unacceptable side of the rating scale. It can be observed that responses of 4 and 5 are consis-

tently considered outliers for all three aspects, with the exception of Q7, where responses of 4 and 5 are below the 25th percentile. It is worth pointing out that Q7 has a slightly higher SD, which means that there is relatively more variation within responses compared to the other questions. It is unclear as to what factors contributed to this slight difference observed between Q7 and the other 11 questions.

Part 3 of the hypothesis suggests that destructive-type verbs impose existential presuppositional readings onto *ba* sentences with indefinite *ba* NPs. It predicts that, in the experiment, regardless of whether or not the scenarios constructed implied mutual knowledge of the *ba* NPs, participants should find the *ba* sentences with destructive-type verbs acceptable. While it is true that all ten questions have rating scores above 3, it is interesting to observe the difference of the means within sets of sentences that contain the same verbs. The means for the 10 questions are presented in Table 1 based on the verbs and whether or not there was implanted presupposition. For the verb *diu* ‘lose’, the question that does not have mutual-knowledge implication received a higher rating score than the one that does. For the other four destructive-type verbs, the results show the opposite – the questions that have mutual-knowledge implications received higher scores than the ones that do not. In the cases of *sha* ‘kill’ and *ca* ‘erase’, the score differences are more substantial numerically compared to the other two verbs. Though the mean rating scores for the 10 questions are all on the acceptable side of the rating scale, there are differences in the degree to which the average participant found them acceptable, at least on the numeric level. Whether or not the differences in means observed are statistically significant can be an area of investigation for future research. From the current analysis, it is hard to generalize definitive inferences from these differences observed from the means because the variations and the inconsistent pattern are very likely due to some factors other than having or not having the implications. For example, participants’ ratings are likely to be affected by the scenarios themselves since the set of scenarios for the same verbs contain differences other than the mutual-knowledge implications.

For the most part, the results of the experiment match all parts of the hypothesis and their predictions. There are, however, certain results that go against my predictions or results that exhibit

variation when compared to similar questions. Yet there is not enough evidence to reject the hypothesis. Given the distributions of the demographic questions, it is possible that the imbalance of characteristics in the sample contributes to some of the variation and exceptions. In particular, the majority of the participants are from the Southern part of China, and as discussed above, it is reasonable to believe that there is a significant number of participants from Shanghai who also speak Shanghainese. It is unclear, then, whether the fact that they can speak Shanghainese had an effect on their judgments. In this sample, there is also no participant who is monolingual – this is even after the fact of not counting other Chinese dialects. Therefore, it is impossible to analyze the effect of foreign language(s) on participants' judgments. Age and education level might have varying effects on judgments as well. All the aforementioned factors are potential areas of interest to look into in future research. The lack of diversity within the sample is one of the drawbacks of the survey's distribution method, though it is only one for the generalizability of the syntactic phenomenon to the entire Mandarin native speaker population. The results, nevertheless, still provide insight on the use of *ba* construction, especially from a socio-linguistic perspective where socio-syntacticians might be interested in exploring further.

5 Conclusion

This thesis has examined Mandarin *ba* sentences with indefinite *ba* NPs specifically with respect to the types of verbs that can or cannot be used with this sentence structure. It is a common understanding that the *ba* construction rejects indefinite *ba* NPs (Li & Thompson, 1981; Chen, 2004; Ma, 2014). However, I have observed that *ba* sentences with indefinite *ba* NPs can be acceptable when used with a particular type of verb – the destructive type of verbs – but when used with creative-type verbs, these sentences are unacceptable. I have also observed that this pattern only holds in the perfective aspect, but not in other aspects such as experiential, durative, and habitual aspects. Given that the *ba* construction prefers specific and identifiable *ba* NPs, it is possible that destructive-type verbs in perfective aspect are able to make the indefinite *ba* NPs easier to

imagine for the hearer of the sentences, i.e. making it more identifiable. Therefore, I form the four-part hypothesis predicting that in the perfective aspect, if used with verbs of the destructive type, *ba* sentences with indefinite *ba* NPs are acceptable, but if used with verbs of the creative type, *ba* sentences with indefinite *ba* NPs are unacceptable. I further propose that the reason for this phenomenon is that destructive-type verbs intrinsically presuppose the existence of the *ba* NPs. I then perform an experiment aiming to test this hypothesis.

From the experiment, I obtain mixed results. For the destructive type of verbs, though two of the 10 questions have relatively lower rating scores, they all match the prediction of the hypothesis that these sentences are acceptable. For the creative type of verbs, on the other hand, only three out of five questions received responses with means that match the prediction of their unacceptability. The other two questions show results in the opposite direction. Questions testing the observed pattern in experiential, durative, and habitual aspects demonstrate a strong match with the prediction that the pattern does not hold in the aforementioned three aspects. Lastly, questions with destructive-type verbs are all acceptable as expected regardless of whether or not they have implications of mutual knowledge on the *ba* NPs. I cannot, however, generate any inferences from the differences in means observed within sets of questions with the same destructive type of verb because the directions of the differences are not consistent. It is uncertain if the differences are due to the manipulations of presuppositions or some other unknown factors. Therefore, the experiment results offer some confirmation on the grammatical aspects that the pattern can be observed in, the general acceptability of *ba* sentences with indefinite *ba* NPs with destructive-type verbs in the perfective aspect, as well as the intrinsic existential presupposition the destructive-type verbs bring to the indefinite *ba* NPs. However, it is inconclusive as to the unacceptability of such *ba* sentences with creative-type verbs and to the effect of having explicit presupposition on the acceptability of such *ba* sentences with destructive-type verbs.

The inconclusiveness of the results as well as the drawbacks in the experiment I conducted can inspire future research. One potential area is “factive” verbs – a class of verbs that “forget” belongs to – exploring if the observation on destructive-type verbs can be expanded to factive verbs

(Shetreet et al., 2019). Other directions, specifically socio-linguistic angles, include exploring if age differences, the ability to speak a dialect, and being monolingual affect speakers' judgments on the usage of *ba* construction, e.g. if older generations are more conservative in terms of *ba* construction usage; or if speaking Shanghainese makes speakers more easily accept *ba* construction usages that tend to be controversial.

Finally, it is worth highlighting three ways in which this thesis is unique and innovative. First, this thesis is the first study that I am aware of to systematically explore the varying behaviors of *ba* construction with indefinite NPs. Second, it is also the first study to examine *ba* construction with experimental data, adding in the perspective and insight of everyday language use. Last but not least, the experiment results show wide variation in judgements on the acceptability of *ba* construction in different contexts, the level of which is likely unprecedented. As the variation implies potential correlation with various social factors, this study opens the door for future socio-syntactic research on *ba* construction as well.

Glossing Abbreviations

AUX	Auxiliary
CRS	Current relevant state
DUR	Durative aspect
EXP	Experiential aspect
GEN	Genitive case
NEG	Negation
PFV	Perfective aspect

Appendices

A Pie Charts for Demographic Questions

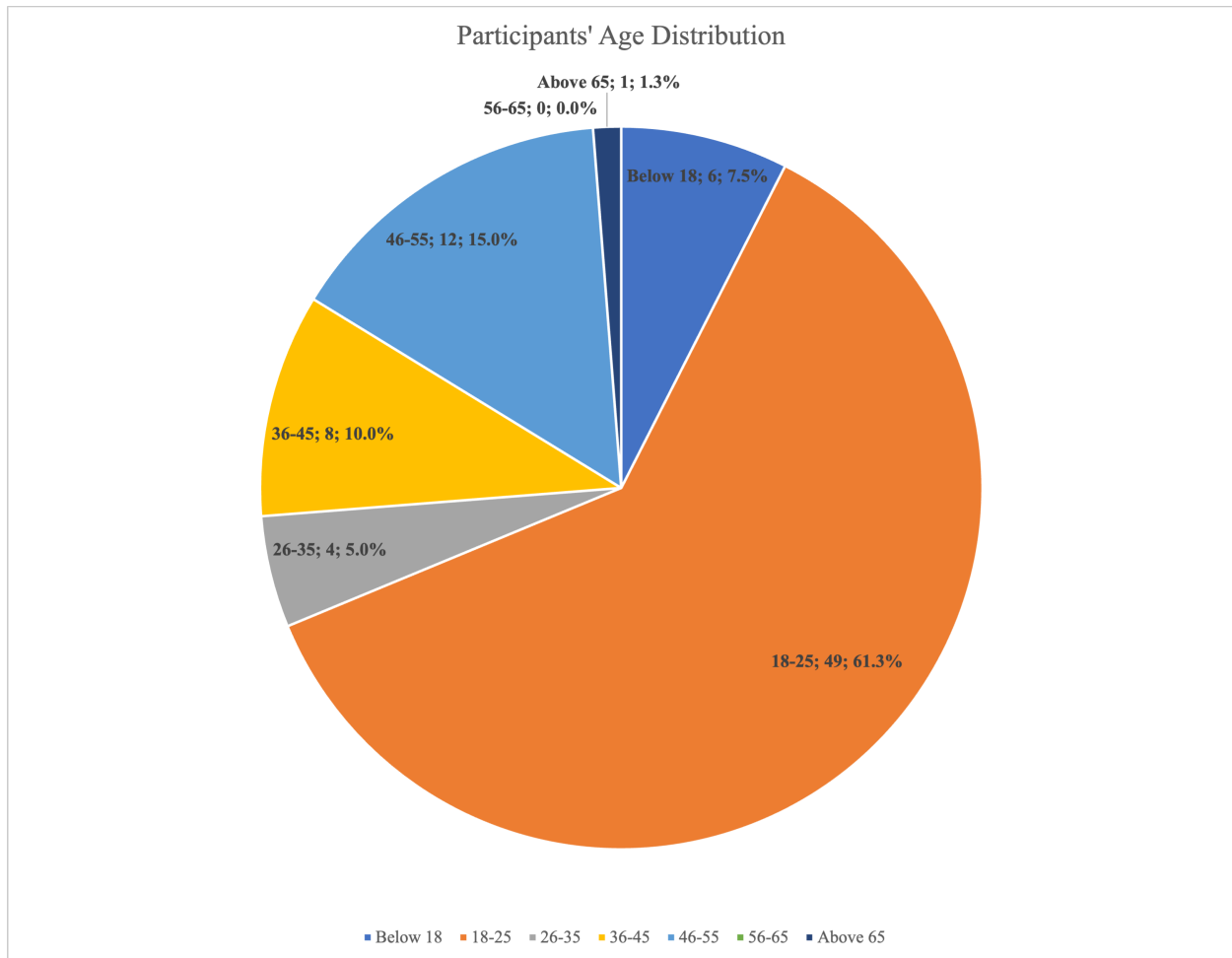


Figure 10: Participants' age distribution

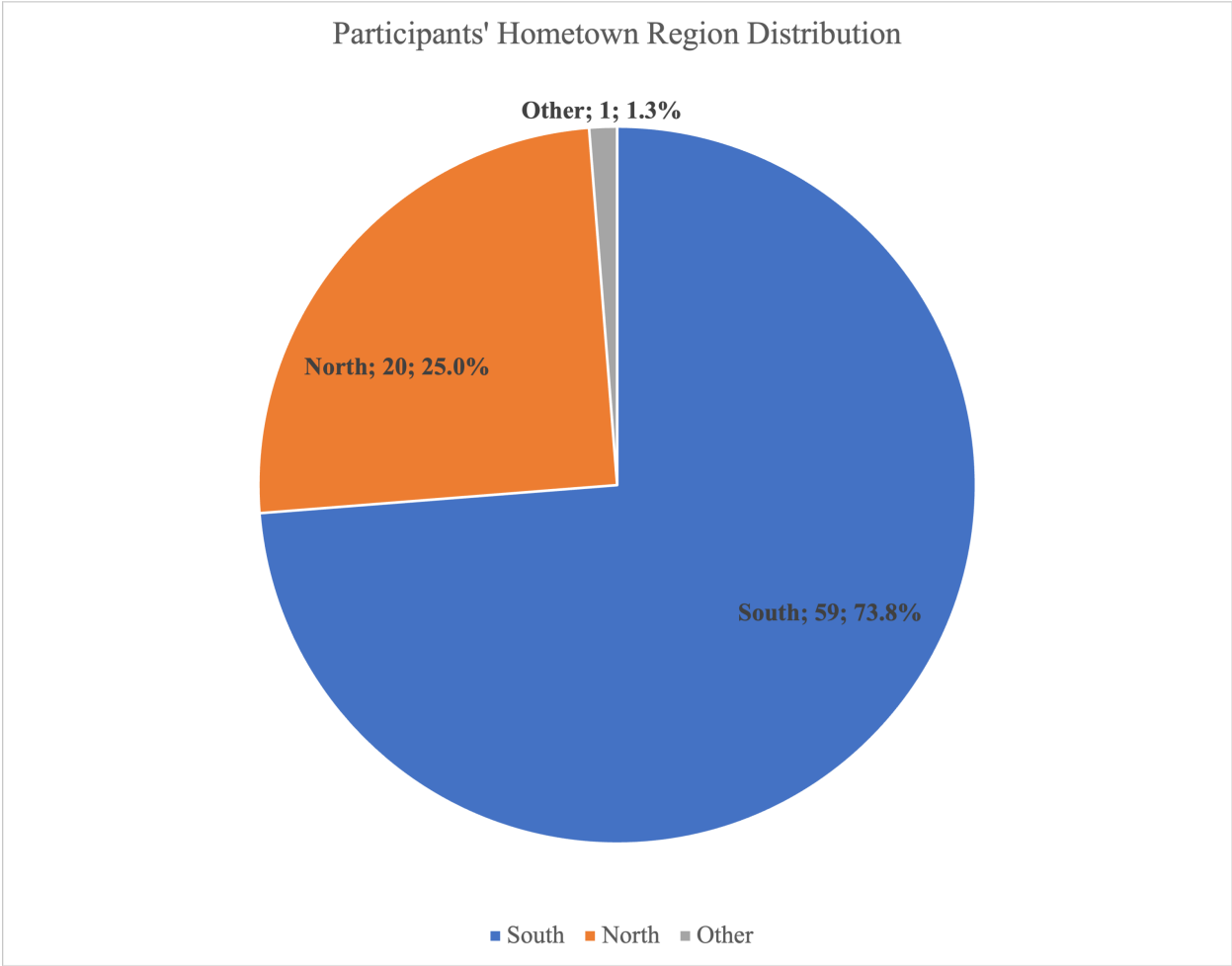


Figure 11: Participants' hometown region distribution

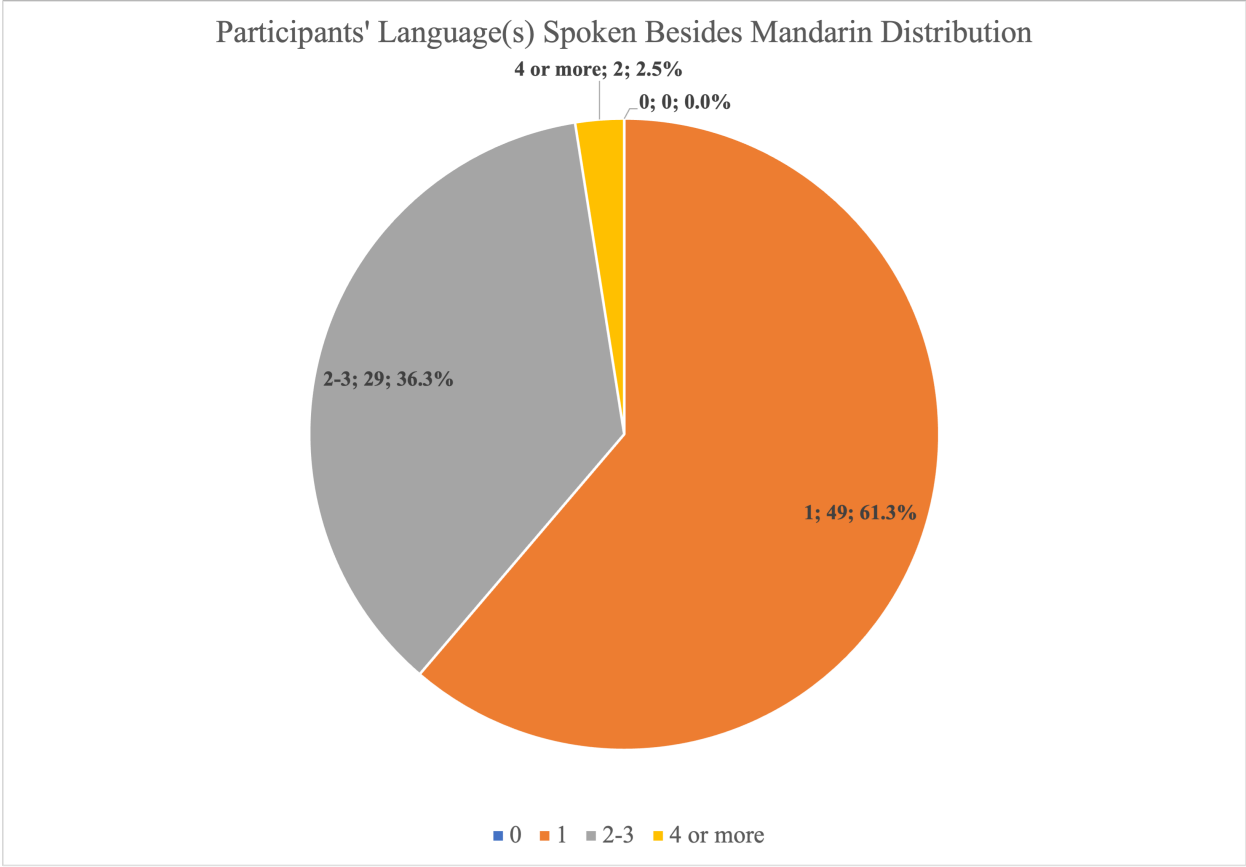


Figure 12: Participants' language(s) spoken besides Mandarin distribution, excluding dialects

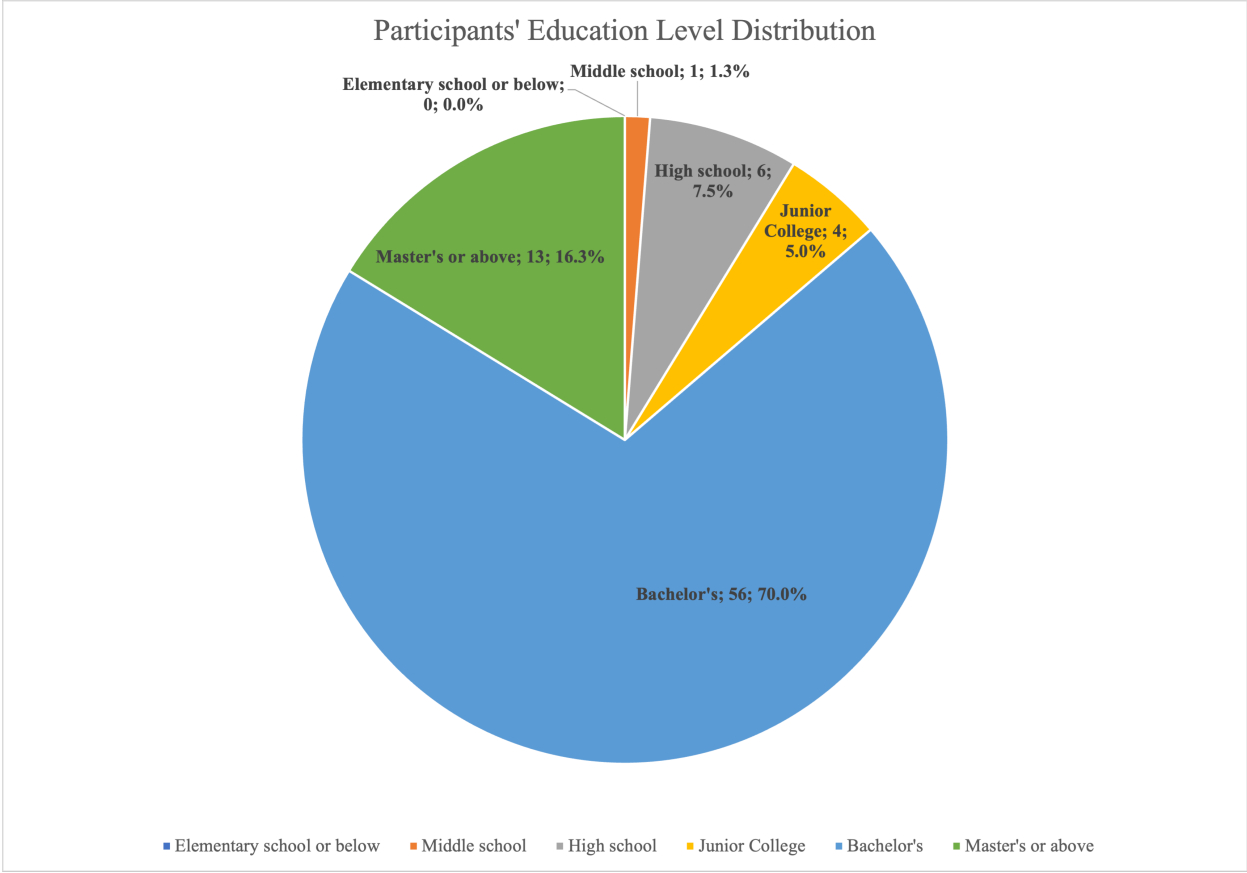


Figure 13: Participants' education level distribution

B Instruction, Questions, and Responses from Experiment with Translation

Below are the instruction and list of questions from the experiment with English translation. Responses both included in and removed from the analysis are provided below each question. Responses for each participant can be identified by the position of a particular response, e.g. the first response in each series belongs to the same participant.

中文“把字句”与非“把字句”的使用认同度调查
Usage acceptability on Mandarin *ba* and non-*ba* sentences
感谢您参与本次匿名语言学实验研究！

Thank you for participating in this anonymous Linguistic experimental study!

1. 实验中，我将会问您关于在不同场景中，您对一些“把字句”和“非把字句”的使用认同度的问题。每题将会有有一个简短的场景描述和对话。蓝色字体的句子为实验重点。在每题最后，基于您对该句子在该场景下使用的认同度，即在何种程度上您可以合理预期在日常对话中听到该句子且不会感到意外或困惑，会请您对蓝色字体句子进行打分。认同度打分范围为1-5分。选项将以量表形式呈现。1分代表完全不认同；5分代表完全认同。在此问卷的开始部分，还将会有一些人口属性问题，包括您的年龄段，最高学历等。如您同意参与本实验研究，您对人口属性及使用认同度问题的回答将会以匿名形式呈现在我的语言学毕业论文中并被发表。因本研究想要获取您对句子使用的直觉判断，当您点击下一页后，您将无法返回上一页修改您的答案。本实验研究面向中文母语者。如不满足该条件，请退出本次实验。谢谢！如您已阅读以上描述，并同意继续参与此实验研究，请选“同意并继续”并点击下一页（Next）开始答题。

In this study, I will ask you questions regarding the acceptability of the usage of some *ba* and non-*ba* sentences in different scenarios. Each question has a brief description of the scenario and a short conversation, and the sentence of interest that I seek an acceptability rating on is highlighted in blue. The acceptability ratings will be presented on a scale from 1-5, where 1 means completely disagree with the usage within the given context, and 5 means completely agree with the usage within the given context. Acceptability is defined as the extent to which you could reasonably expect someone else using it in a conversation with you without you feeling confused. At the beginning, there will also be several questions asking for your demographic information (including age range, education level, etc.) If you choose to participate, your responses, including both demographic and usage acceptability questions, will be part of my Linguistic thesis and may be published in an anonymized form. Since this study investigates your first intuition, the system will prevent you from going back to change your responses. Once you move on to the next question, your response is locked. There will be 54 questions in total (4 on demographics and 50 on usage acceptability). You can take a break in between questions at any time. This experimental study is for native Mandarin speakers to participate. If you are not a native Mandarin speaker, please exit this

study. Thank you! If you have read the above description and agree to participate in this study, please select “agree and continue” below to go on to the next page.

All participants answered “agree and continue.”

2. 您的年龄段为
Your age range

- A 18岁以下 (Below 18)
- B 18-25
- C 26-35
- D 36-45
- E 46-55
- F 56-65
- G 65岁以上 (Above 65)

Responses: B B B B B C B B B B E B B B B E B E B E B C B D E B B B E E A D G D
E B D C B B B E B B B E E D D D B B B B B A A A A A B B B B B B B B B B B B B
B B D E C

Removed: B B B B B B B B B B F B C D B E C D D D B A C C C A B B D D D B
B B B B B A

3. 您的家乡在
Your hometown is in the

- A 北方 (Northern part)
- B 南方 (Southern part)
- C 其他 (Other)

Responses: B B A B B B B B B B B A B A B B B B B B B A B B B B A A B B A B
B B B B A A A B B B B A B B B B C B A A B B B B B B B B B A B B A A B B A A B
B A B B B A

Removed: B B B A B B A B A B B A B B B B B B B B B B A A A C A A B A B
B A B C B B B

4. 您会说几种除中文外的语言？（不包括方言）
How many languages do you speak other than Mandarin Chinese (excluding dialect)?

- A 0
- B 1
- C 2-3

D 4种及以上 (4 or more)

Responses: C B B B C D B B B C B B C C B C B C B B B B B C C B C B C B B B B B B
B B C D B B B B B C C B B C B C B B C C B C B B B B C B B B C C B C C C C C B C
B C B B B

Removed: B C B B C C B C C B B B B C C 0 C B C B B D B B B B C C B C C C
B C C B C B

5. 您的最高学历为 (包括在读)
Your highest level of education (including ones in progress)

- A 小学及以下 (Elementary school or below)
- B 初中 (Middle school)
- C 高中/中专/技校 (High school)
- D 大学专科 (Junior college)
- E 大学本科 (Bachelor's)
- F 硕士研究生及以上 (Master's or above)

Responses: E E E E E E E E E E E D E E E E E F E E E E E E E D E E F C E D E
E E F F E E C F F E E D E F E F E E E E E C C B C C E E F F E E E E E E E F E F E F E E

Removed: E E E E E E F E E E C E F F E E E F E E E F E E E C F E E F F F F F
E E E C

6. 张三, 李四和赵五是同学。张三和李四在聊天。
张三: 赵五最近是在练字吗?
李四: 没有吧。他每天把一个字写。看着不像在练字。
请根据您对蓝色字体句子的使用认同度打分 (范围: 1-5分; 1: 完全不认同该句子在此场景下的使用; 5: 完全认同该句子在此场景下的使用)
Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan and Lisi are chatting.
Zhangsan: Is Zhaowu trying to improve his handwriting these days?
Lisi: I don't think so. He writes a character every day. It doesn't seem like he's trying to improve. (ba; habitual)
Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 1 1 1 1 3 1 1 1 1 1 2 1 1 1 1 2 2 1 1 1 5 1 1 1 1 2 1 2 1 1 1 3 1 1 1 1 2 1 1 1 1 1 1
1 2 2 1 1 2 1 1 4 1 1 1 1 1 1 1 1 1 1 1 3 1 1 1 2 1 2 1 1 1 1 1 1 1 1

Removed: 1 1 2 1 1 1 3 1 1 1 5 2 1 2 1 3 2 1 5 1 1 3 1 1 1 1 2 1 1 1 1 1 1 1 1 3 1
1

7. 张三, 李四和赵五是朋友。赵五最近想要卖车。张三和李四在聊天。
张三: 这不是赵五第一次卖车吧?

李四：不是。之前他把一辆车子卖过。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are friends. Zhaowu wants to sell a car. Zhangsan and Lisi are chatting.

Zhangsan: This isn't the first time Zhaowu selling a car, is it?

Lisi: No. He has sold a car before. (ba; experiential)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 1 1 5 2 2 1 2 1 3 2 5 2 1 3 2 2 1 2 3 1 1 1 2 1 2 3 2 1 1 4 1 1 1 2 2 1 3 4 4 1 4
2 1 3 1 1 3 1 2 4 1 2 1 1 2 1 5 4 2 1 2 4 2 1 1 2 5 5 3 1 4 1 2 2 1 1 1 1

Removed: 1 2 1 2 1 4 5 5 1 1 5 5 1 4 2 2 3 4 5 2 4 3 1 2 1 2 1 4 1 1 1 3 3 1 1 2 5
1

8. 张三，李四和赵五是同学。张三和李四正在聊天。

张三：赵五拿到了计算机房的工作，怎么看上去不太高兴？

李四：今天是工作第一天，但是他把一台电脑丢了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan and Lisi are chatting.

Zhangsan: Zhaowu found a job at the computer lab. Why does he seem unhappy?

Lisi: Today is his first day of work, but he lost a computer. (ba; perfective, presupposition)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 3 3 5 5 5 5 4 3 5 2 5 5 5 4 5 5 4 3 5 4 3 4 5 3 5 5 4 5 5 4 5 5 5 5 4 5 4 4 5 5 5 1 5
5 5 5 5 4 4 5 5 4 2 5 3 3 4 4 5 5 5 3 3 4 5 5 5 3 5 5 4 2 5 4 5 4 5 1 5 3

Removed: 5 3 4 5 2 5 5 5 5 3 4 5 4 4 5 4 5 5 5 5 3 5 5 4 5 5 4 5 5 2 5 5 4 3 4 5
5

9. 张三和李四是邻居。李四家的狗最近生了一只小狗。

张三：好可爱的小狗！这是你们家的狗生的第一只小狗吗？

李四：这不是第一只。之前它把一只小狗生过。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan and Lisi are neighbors. Lisi's dog recently gave birth to a puppy.

Zhangsan: The puppy is so cute! Is this the first puppy your dog gave birth to?

Lisi: No, this isn't the first one. It has given birth to a dog before. (ba; experiential)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 1 1 1 1 1 1 2 2 1 1 1 1 2 1 1 1 1 3 1 1 1 1 1 1 1 1 1 3 1 5 1 1 1 1 3 1 1 1 1
1 1 2 1 1 2 1 1 1 1 1 1 1 1 1 3 2 1 1 1 1 1 1 1 1 1 1 3 1 2 1 1 1 1 1 1 1

Removed: 1 2 1 2 1 1 2 1 1 1 5 2 1 1 1 2 2 1 5 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 3
1

10. 张三，李四和赵五是同事。赵五有事提前走了，但是下午回来了一次。张三和李四在聊天。

张三：我看到赵五下午回来了一次。你知道为什么吗？

李四：他把一件事想起了，但他没说具体的。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are co-workers. Zhaowu left early, but came back briefly in the afternoon. Zhangsan and Lisi are chatting.

Zhangsan: I saw Zhaowu come back briefly in the afternoon. Do you know why?

Lisi: He remembered something, but he didn't say anything specific. (ba; perfective)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 2 1 5 2 1 2 3 1 3 2 2 2 1 2 3 2 1 1 2 1 1 1 3 1 1 1 1 1 3 3 1 2 1 4 2 1 4 1 1 1 1
2 2 3 1 3 3 5 3 2 2 4 2 1 2 1 4 2 2 1 3 2 5 2 1 2 4 2 4 2 3 1 3 1 1 1 1 3

Removed: 1 4 1 3 1 1 3 3 2 2 5 2 1 2 1 2 2 1 5 2 2 3 1 1 1 1 2 1 1 1 2 3 2 2 2 5 2 5
1

11. 张三，李四和赵五是朋友。赵五最近想要买新车。张三和李四在聊天。

张三：这不是赵五第一次去买车吧？

李四：不是。之前他把一辆车子买过。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are friends. Zhaowu wants to buy a new car. Zhangsan and Lisi are chatting. Zhangsan: This isn't the first time Zhaowu buying a car, is it?

Lisi: No. He has bought a car before. (ba; experiential)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 2 1 3 1 1 1 2 2 2 2 4 2 1 3 2 1 1 1 4 1 1 1 2 1 2 1 1 1 3 3 1 2 1 1 2 1 4 1 4 2 1
2 2 1 1 1 2 1 1 2 2 1 1 1 2 1 1 2 2 1 2 1 1 1 1 1 3 4 4 1 3 1 2 2 1 1 1 1

Removed: 2 2 1 2 1 1 3 2 1 1 5 1 1 2 1 2 2 1 5 2 2 3 1 1 1 2 2 1 1 1 1 2 1 1 1 1 3
1

12. 张三，李四和赵五是同学。张三在找赵五，但是找不到他。

张三：你知道赵五在哪里吗？

李四：他在教室里。他在把一个字写着。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan is looking for Zhaowu but can't find him.

Zhangsan: Do you know where Zhaowu is?

Lisi: He is in the classroom. He is writing a character. (ba; durative)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 1 1 1 1 2 1 1 1 2 1 2 1 1 1 1 4 2 1 1 1 4 1 1 1 1 1 1 1 1 1 3 3 1 1 1 1 2 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 3 1 1 1 1 1 3 1 1 1 2 2 1 1 1 1 3 1 1 1 2 1 2 1 1 1 1 1 1 1 1 1 1

Removed: 1 3 1 1 1 1 1 1 1 1 5 1 1 2 1 2 3 1 5 1 1 3 1 1 1 1 1 1 2 1 1 1 1 1 1 1 2 4 1

- 13. 张三，李四和赵五是同事。赵五有事提前走了，但是下午回来了一次。张三和李四在聊天。

张三：我看到赵五下午回来了一次。你知道为什么吗？

李四：他把一件事忘了，但他没说具体的。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are co-workers. Zhaowu left early, but came back briefly in the afternoon. Zhangsan and Lisi are chatting.

Zhangsan: I saw Zhaowu come back briefly in the afternoon. Do you know why?

Lisi: He forgot something, but he didn't say anything specific. (ba; perfective, no presupposition)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 3 1 4 5 5 4 4 5 5 4 4 5 5 5 5 5 5 4 4 3 4 5 5 5 4 5 5 5 5 1 5 4 5 5 5 5 5 4 3 1 5 4 5 5 5 5 3 5 5 5 2 3 5 4 3 5 4 5 5 5 5 5 4 5 5 3 3 5 4 5 3 5 4 5 3 5 4 5 4

Removed: 5 2 5 5 3 5 5 5 5 4 5 2 2 3 5 4 3 5 3 5 5 3 5 3 1 5 5 5 5 3 5 5 5 4 5 4 5 5

- 14. 张三，李四和赵五是同学。张三和李四正在聊天。

张三：赵五怎么突然变得那么高兴？

李四：因为他把一台电脑找到了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan and Lisi are chatting.

Zhangsan: Why is Zhaowu suddenly so happy?

Lisi: Because he found a computer. (ba; perfective)

Please rate the highlighted sentence based on the extent to which you agree with its usage

(score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 3 1 2 4 5 2 4 1 5 4 4 3 5 3 1 4 3 4 2 3 4 5 5 3 3 5 5 2 5 5 5 3 3 1 4 5 3 1 4 1 3 5 1
5 5 4 5 2 3 5 4 3 4 3 3 3 5 4 5 5 4 4 5 5 5 4 2 3 4 2 4 2 2 4 4 3 1 1 5 5

Removed: 5 3 3 4 3 2 5 4 2 2 5 5 1 2 3 3 3 5 3 4 4 3 4 4 1 1 5 2 1 2 4 2 3 5 5 4 5
1

15. 张三和李四是邻居。他们正在聊天。

张三：你知道赵五家的狗吗？

李四：知道。听说它把一只小狗生了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan and Lisi are neighbors. They are chatting.

Zhangsan: Do you know about Zhaowu's dog?

Lisi: Yeah. I heard that **it gave birth to a puppy.** (*ba*; perfective)

Please rate the **highlighted sentence** based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 1 1 1 1 3 1 1 2 1 4 3 1 4 1 1 1 3 2 1 1 3 1 2 1 2 1 2 1 1 1 2 3 1 1 1 1 1 1 2 1 1 1 1
2 2 2 1 1 1 1 1 2 1 1 2 1 2 1 2 1 3 2 2 1 2 2 1 2 1 1 3 1 3 1 2 1 2 1 1 1 1 2

Removed: 1 3 1 2 1 1 1 1 1 1 1 1 1 1 2 1 3 2 3 5 2 2 3 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 3
1

16. 张三，李四和赵五是朋友。张三和李四正在聊天。

张三：李四，你知道赵五昨天在干什么吗？

李四：他把一辆车子卖了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are friends. Zhangsan and Lisi are chatting.

Zhangsan: Lisi, do you know what Zhaowu did yesterday?

Lisi: **He sold a car.** (*ba*; perfective, no presupposition)

Please rate the **highlighted sentence** based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 3 1 2 5 5 5 5 5 2 4 3 4 4 5 5 5 5 5 5 4 4 5 5 3 4 5 5 4 5 4 5 5 3 5 5 5 4 5 3 4 5 4 4
4 5 5 5 4 4 5 5 4 4 5 4 1 4 5 4 5 5 5 5 5 5 5 5 4 5 5 5 4 4 4 5 3 5 5 5 5

Removed: 5 5 5 5 3 5 5 1 4 4 5 5 2 3 4 4 5 5 5 5 5 3 5 5 5 4 5 5 5 2 3 5 4 5 4 4 5
5

17. 张三和李四是同学。他们在聊天。

张三：赵五怎么这几天不太高兴？

李四：他在计算机房工作，但是他每天把一台电脑丢。你说他能高兴嘛。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan and Lisi are classmates. They are chatting.

Zhangsan: Why is Zhaowu unhappy recently?

Lisi: He works in the computer lab, but he loses a computer every day. How could he be happy under this circumstance? (ba; habitual)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 1 1 4 1 1 1 2 2 3 1 2 1 1 3 4 1 5 1 4 1 1 1 1 1 1 1 1 1 1 4 2 1 1 1 1 3 1 1 1 1 2 1 1 2 1 1 2 1 1 3 1 1 3 1 1 1 2 1 1 1 1 1 3 1 1 1 5 1 3 1 2 1 1 1 1 1 1 1

Removed: 2 2 1 3 1 1 1 4 1 2 1 4 1 2 1 2 2 4 5 3 1 3 1 2 1 1 1 1 1 1 1 3 1 1 1 2 1 1

- 18. 张三和李四在同一个车行工作。他们正在聊天。

张三：昨天赵五来过车行了吧？

李四：对。他把一辆车子卖了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan and Lisi work in the same car dealership. They are chatting.

Zhangsan: Did Zhaowu come here yesterday?

Lisi: Yeah. He sold a car. (ba; perfective, presupposition)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 3 4 5 5 5 3 5 4 4 4 4 5 5 5 5 5 5 4 5 5 5 4 5 5 5 5 4 5 5 3 3 5 5 5 4 5 4 5 4 5 5 5 5 5 2 5 5 5 4 4 5 3 4 5 5 5 5 5 5 5 5 5 5 4 5 5 5 2 4 4 5 1 5 5 5 5

Removed: 5 4 3 4 3 5 5 4 5 4 5 5 3 3 5 3 5 5 4 5 5 3 5 3 5 4 5 5 5 3 4 5 5 5 5 4 5 5

- 19. 张三，李四和赵五是同学。张三在找赵五，但是找不到他。

张三：你知道赵五在哪里吗？

李四：他在教室里。他在把一个字擦着。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan is looking for Zhaowu but can't find him.

Zhangsan: Do you know where Zhaowu is?

Lisi: He is in the classroom. He is erasing a character. (ba; durative)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 1 1 2 1 1 1 2 1 3 1 1 1 1 2 4 2 1 1 4 1 1 1 1 1 1 1 1 1 2 3 1 1 1 1 2 1 1 1 1 1 1
1 1 2 3 1 2 2 1 2 1 1 1 1 2 1 2 2 1 1 2 1 2 1 1 1 2 1 1 1 1 1 2 1 1 1 1 1

Removed: 1 2 1 1 1 1 1 1 1 2 5 2 1 2 1 2 1 1 4 1 1 3 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1
1

20. 张三和李四在同一个车行工作。他们正在聊天。
张三：昨天赵五来过车行了吧？
李四：对。他把一辆车子买了。
请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）
Zhangsan and Lisi work in the same car dealership. They are chatting.
Zhangsan: Did Zhaowu come here yesterday?
Lisi: Yeah. He bought a car. (ba; perfective)
Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 4 4 1 3 4 1 1 2 2 4 2 4 3 1 4 3 3 5 3 4 1 2 4 4 5 2 3 3 2 5 4 3 4 1 5 2 1 3 1 5 4 5
3 3 5 4 3 4 2 5 3 4 5 3 4 2 1 2 2 5 5 5 3 5 2 2 5 4 5 5 1 2 4 2 2 5 1 5 3

Removed: 5 3 2 4 3 1 4 4 2 5 5 5 2 2 4 2 5 3 4 4 5 3 5 1 5 4 5 1 5 3 1 5 3 1 5 2 5
1

21. 张三和李四是邻居。他们正在聊天。
张三：昨天去赵五家玩得怎么样？听说他家养了很多鸡。
李四：还不错。他把一只鸡杀了。然后我们喝了鸡汤。
请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）
Zhangsan and Lisi are neighbors. They are chatting.
Zhangsan: How was your visit to Zhaowu's house? I heard he has raised a lot of chicken.
Lisi: It was pretty nice. He killed a chicken, and we had some chicken soup. (ba; perfective, presupposition)
Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 3 4 4 5 5 5 4 4 4 5 4 4 4 4 5 5 5 5 5 5 4 5 5 3 4 5 5 5 3 3 5 5 1 5 5 5 4 4 5 5 5 4 5
5 5 5 5 5 5 4 5 4 5 5 5 5 5 4 5 5 4 5 5 4 5 5 5 5 5 5 4 4 4 5 3 5 5 1 5

Removed: 5 5 5 5 5 5 3 5 4 3 5 5 1 3 4 4 5 4 1 5 5 3 4 4 5 4 5 4 5 5 4 5 5 4 5 4 5 4 5
5

22. 张三和李四在同一个车行工作。他们正在聊天。
张三：昨天赵五来过车行了吧？
李四：对。他买了一辆车子。

Responses: 2 1 1 1 1 1 1 2 1 2 1 2 1 1 4 2 1 1 1 5 1 1 1 2 1 1 1 1 1 2 3 1 1 1 1 1 2 1 1 1 1 1 1 1
1 1 1 1 1 2 1 1 2 1 1 1 1 2 1 2 1 1 2 2 1 2 1 4 1 2 1 3 1 1 1 2 1 1 1 1 1

Removed: 1 2 1 1 1 1 1 1 1 1 5 1 1 2 1 2 1 1 4 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5 1 4
1

25. 张三，李四和赵五是同学。张三和李四在聊天。
张三：赵五这几天是在记黑板上的那些字吗？
李四：不是吧。他每天把一个字擦。我也不知道他在做什么。
请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）
Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan and Lisi are chatting.
Zhangsan: Is Zhaowu trying to memorize the characters on the board?
Lisi: I don't think so. He erases a character every day. I don't know what he is doing. (*ba*; habitual)
Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 1 1 1 1 1 1 2 2 1 2 1 1 1 4 1 2 1 5 1 1 1 2 1 2 1 1 1 2 4 1 1 1 1 2 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 3 1 4 1 1 1 4 1 1 1 2 1 1 1 1 1

Removed: 1 2 1 1 1 1 1 1 1 1 5 1 1 2 1 2 1 1 5 1 4 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 1
1

26. 张三，李四和赵五是同学。下午，赵五去找张三，但是张三不在教室。
张三：李四，你知道赵五下午为什么来找我吗？
李四：他没说话。但是他把一个字写了。
请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）
Zhangsan, Lisi, and Zhaowu are classmates. Zhaowu was looking for Zhangsan in the afternoon, but Zhangsan wasn't in the classroom.
Zhangsan: Lisi, do you know why Zhaowu was looking for me this afternoon?
Lisi: He didn't say, but he wrote a character. (*ba*; perfective)
Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 2 1 2 3 1 1 1 2 2 2 5 4 1 2 3 4 3 2 5 4 4 1 1 5 2 1 4 1 2 3 1 5 4 1 2 1 2 1 1 1 1
2 1 2 4 2 2 1 5 2 2 1 1 1 2 1 2 5 4 1 3 1 1 1 4 5 3 3 3 2 3 4 3 2 1 1 1 1

Removed: 1 4 2 4 3 4 1 1 2 2 5 4 1 2 1 2 3 2 4 2 4 3 1 1 1 1 4 1 2 1 1 1 1 1 1 1 1 1
1

27. 张三，李四和赵五是室友。张三在找赵五，但是找不到他。
张三：你知道赵五在干什么吗？
李四：他去车行了。他在把一辆车子卖着。

请根据您对**蓝色字体句子**的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are roommates. Zhangsan is looking for Zhaowu but can't find him.

Zhangsan: Do you know what Zhaowu is doing?

Lisi: He went to the car dealership. **He is selling a car.** (*ba*; durative)

Please rate the **highlighted sentence** based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 1 1 1 1 1 1 2 2 1 2 2 1 3 4 1 2 1 5 1 1 1 1 1 1 1 1 1 2 4 3 1 1 4 1 2 1 1 1 1 1
1 1 2 1 1 1 1 1 2 1 1 1 1 2 1 1 2 2 1 2 1 4 2 1 1 2 1 2 1 1 1 2 1 1 1 1 2

Removed: 2 4 1 2 1 2 1 1 1 1 5 2 1 2 1 2 1 1 4 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1

28. 张三，李四和赵五是同学。下午，赵五去找张三，但是张三不在教室。

张三：李四，你知道赵五下午为什么来找我吗？

李四：可能是关于你们在做海报吧。**他把一个字擦了。**

请根据您对**蓝色字体句子**的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are classmates. Zhaowu looked for Zhangsan in the afternoon, but Zhangsan wasn't in the classroom.

Zhangsan: Lisi, do you know why Zhaowu was looking for me this afternoon?

Lisi: Maybe it was about the post you guys were making. He erased a character. (*ba*; perfective, presupposition)

Please rate the **highlighted sentence** based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 4 4 2 1 5 5 4 5 4 4 4 4 5 4 5 5 5 5 5 5 5 4 4 4 3 5 5 5 5 4 5 5 5 5 5 3 3 4 4 5 2 4
5 1 5 5 1 4 5 5 4 1 5 4 4 4 5 2 5 5 5 5 4 5 4 4 4 4 1 2 5 4 4 2 4 5 4 5 5

Removed: 1 2 5 4 3 5 2 1 4 4 5 5 1 3 5 3 2 5 4 5 5 3 5 1 4 1 4 3 5 2 3 4 4 5 5 4 5
1

29. 张三，李四和赵五是室友。张三在找赵五，但是找不到他。

张三：你知道赵五去干什么了吗？

李四：他去车行了。**他在买一辆车子。**

请根据您对**蓝色字体句子**的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are roommates. Zhangsan is looking for Zhaowu but can't find him. Zhangsan: Do you know what Zhaowu is doing?

Lisi: He went to the car dealership. **He is buying a car.** (control in SVO order)

Please rate the **highlighted sentence** based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 4 4 5 5 5 4 5 5 5 4 4 4 5 5 5 5 4 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 4 4 5 5 5
4 5 4 5 4 4 4 5 4 5 5 5 5 5 5 5 5 5 5 4 5 4 4 5 5 5 5 4 5 5 5 5 5 5

Removed: 3 5 3 3 2 3 2 1 5 3 5 3 1 3 3 4 2 3 4 4 5 3 3 5 2 1 3 3 2 3 1 2 3 1 5 3 5
1

30. 张三，李四和赵五是同事。赵五有事提前走了，但是下午回来了一次。张三和李四在聊天。

张三：我看到赵五下午回来了一次。是因为他在做的项目吗？

李四：应该是的。他把一件事忘了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are co-workers. Zhaowu left early, but came back briefly in the afternoon. Zhangsan and Lisi are chatting.

Zhangsan: I saw Zhaowu come back briefly in the afternoon. Was it because of the project he's working on?

Lisi: I think so. He forgot something. (ba; perfective, presupposition)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 4 4 4 5 5 4 5 5 5 4 4 5 5 4 5 5 5 5 5 4 5 5 5 5 5 5 5 4 5 4 5 5 5 5 5 5 4 4 4 5 4 5
5 4 5 5 2 5 5 5 4 5 4 4 4 5 5 5 5 5 5 5 5 2 5 4 5 5 4 3 4 5 4 5 3 5 5

Removed: 5 5 4 3 3 5 4 3 5 5 5 4 3 3 5 3 5 5 2 5 5 3 4 3 2 4 5 4 5 4 1 5 5 5 5 3 1
5

31. 张三，李四和赵五是同学。张三和李四正在聊天。

张三：赵五怎么突然不高兴了？

李四：他把一台电脑丢了。

请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）

Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan and Lisi are chatting.

Zhangsan: Why is Zhaowu suddenly unhappy?

Lisi: He lost a computer. (ba; perfective, no presupposition)

Please rate the highlighted sentence based on the extent to which you agree with its usage (score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 4 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 4 5 4 5 5 5
5 5 5 5 5 5 5 4 5 5 4 4 5 5 5 5 4 5 5 5 5 5 1 5 5 5 4 4 3 4 5 5 5 3 5 5

Removed: 5 4 5 4 4 5 5 5 5 5 1 5 2 3 5 4 5 5 4 4 5 3 5 1 5 4 5 4 5 4 3 5 5 5 5 4 2
1

32. 张三，李四和赵五是邻居。赵五邀请张三和李四去他家做客。他们准备杀一只鸡，炖鸡汤喝。

(score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 4 3 1 4 3 4 5 5 4 4 5 5 3 5 5 5 4 2 4 5 5 5 3 4 5 5 3 5 2 1 5 1 3 5 5 2 4 4 2 5 4 5
4 5 5 1 4 5 4 5 4 4 5 2 4 5 3 5 5 1 5 2 1 5 2 5 5 4 1 3 4 2 4 5 3 2 3 5 5

Removed: 5 1 5 3 2 3 2 2 5 2 5 5 2 3 4 3 3 5 1 4 5 3 1 3 1 4 2 2 5 2 1 3 4 3 1 2 3
5

35. 张三和李四是同学。他们在聊天。
张三：听说最近好多人都丢了电脑。
李四：是啊。赵五在失物招领处工作，他每天把一台电脑找到。
请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）
Zhangsan and Lisi are classmates. They are chatting.
Zhangsan: I heard that a lot of people lost their computers recently.
Lisi: I know. Zhaowu works at lost and found. He finds a computer every day. (ba; habitual)
Please rate the highlighted sentence based on the extent to which you agree with its usage
(score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 2 1 2 1 2 1 1 1 1 2 3 1 2 1 1 2 1 1 1 1 5 1 1 1 1 1 1 1 2 3 1 3 1 1 1 1 2 1 1 1 1 1 1
2 1 4 1 1 1 2 1 2 2 1 1 1 2 1 2 2 1 1 2 1 4 2 5 1 2 1 2 1 2 1 1 1 1 1

Removed: 3 5 1 1 1 2 1 1 1 1 5 4 1 2 1 2 3 1 1 1 1 3 1 1 1 1 1 1 1 1 1 1 1 4 1 1 1 1 1
1

36. 张三，李四和赵五是同学。张三和李四在聊天。
张三：赵五最近是在练字吗？
李四：没有吧。他每天写一个字。看着不像在练字。
请根据您对蓝色字体句子的使用认同度打分（范围：1-5分；1：完全不认同该句子在此场景下的使用；5：完全认同该句子在此场景下的使用）
Zhangsan, Lisi, and Zhaowu are classmates. Zhangsan and Lisi are chatting.
Zhangsan: Is Zhaowu trying to improve his handwriting these days?
Lisi: I don't think so. He writes a character every day. It doesn't seem like he's trying to improve. (control in SVO order)
Please rate the highlighted sentence based on the extent to which you agree with its usage
(score range: 1-5; 1: completely disagree; 5: completely agree)

Responses: 5 5 5 5 4 5 5 5 5 5 4 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 4 5 4 5 5 5 5 5
5 5 4 5 4 5 5 4 4 4 4 5 4 5 5 5 5 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

Removed: 5 3 5 5 2 5 5 5 5 3 1 5 4 3 4 3 3 5 1 3 5 3 5 5 5 4 5 5 5 5 1 5 5 5 1 5 2
5

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