The Meaning of Mandarin Particle *le* Based on Syntactic Position

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Abstract

In Mandarin, tense and aspect are indicated by adding particles to sentences, instead of through morphological inflection, like in English. The particle *le* is commonly described as a perfective aspectual marker (Li & Thompson, 1981) and has been heavily researched in Chinese Linguistics. *Le* has two main sentence positions in Mandarin: directly post-verb (verbal), or at the end of a sentence (sentence-final). Previous research is split into two arguments –an analysis of *le* as one complete, unified morpheme, or analyzing *le* with a two-morpheme model containing two homophonous morphemes (Lundvik, 2024). Some argue that verbal *le* is a marker of perfective aspect, while sentence-final *le* can serve multiple functions, whether it is aspect, modality, or change of state.

This study is focused on the multiple meanings of *le*, and how its meaning can differ depending on sentence position, topic content, and speaker context and attitude. While *le* has been analyzed extensively, there is not much empirical survey research that delves into the full semantic meanings that *le* indexes, and all uses of *le* have not yet been fully described.

1 Introduction

The present study focuses on the grammatical marker *le* in Mandarin, which is used directly after the verb, (*verbal*), as in (1), at the end of the sentence (*sentence-final*), as in (2), or in some cases, both, (*double*), as in (3). Many researchers have sought to define *le*, since it seems to contain a variety of meanings, and have attempted to either categorize the meanings of *le* depending on sentence position (two-morpheme approach) or consolidate all the meanings to unify the definition of *le* (one morpheme approach).

(1) 我去了学校。
wǒ qù **le** xúe xiào. (verbal *le*)
1SG go LE school
I *went* to school.

(2) 我去学校了。
wǒ qù xúe xiào **le**. (sentence-final *le*)
1SG went school LE
I *go/am going* to school.
I *have gone* to school.

(3) 我去了学校了。
wǒ qù le xué xiào **le**. (double *le*)
1SG go LE school LE
I *(have) gone* to school.

The three examples above display a minimal triplet, with a sentence using verbal *le* (1), sentence-final *le* (2), and double *le* (3). (1) shows that verbal *le* typically is used as a perfective aspect marker, conveying completion of the event of going to school. (2) shows how sentence-final *le* can convey the start of the event (going to school), but may not indicate completion quite yet. (3) shows the use of double *le*, which is less common and is not discussed in the present study. Here, it conveys present perfect tense (Lundvik, 2024).

In syntax and semantics, research has been primarily based on linguistic judgements of individual researchers. Gibson & Fedorenko (2010) criticized this traditional methodology in syntax and semantics, due to problems such as cognitive biases and incorrect generalizations. Thus, much of the previous research on *le* has relied heavily on intuition and theories, rather than real-world observations. Many authors also tend to analyze various Mandarin sentences (Soh and

Goh 2006) by using theoretical frameworks such as cognitive grammar (Lundvik, 2024), relevance theory (Ljungvist, 2003), or model-theoretic semantics (Chief, 2019). As a result, the definition has been difficult to pinpoint, since so much of the meaning depends on speaker context and personal language, which is not easy to define intuitively without data from native speakers. This study adds quantitative, methodological research that contributes greatly to a field that usually consists of theoretical arguments. The empirical contribution of collecting data from human subjects provides a better understanding of the meaning of *le*.

For the present paper, first we will discuss the two-morpheme vs one morpheme approach to analyzing *le,* followed by the methodology of the questionnaire surveying native Mandarin speakers, in order to identify speakers' semantic association with the particle *le* by obtaining real data on how speakers use and define *le*. The survey consists of multiple-choice questions that ask speakers to select their particular interpretations of meanings on the content of sentences containing *le* in different sentence positions in Mandarin. Then, we will go over the results and discussion of the data, which emphasize the fact that it is necessary to probe native speakers' semantic definitions of *le* and their answers show that there are many more meanings, concepts, and uses that *le* evokes.

A quantitative survey to probe speakers is crucial - this way, speakers can think about *le* in a way that they likely have not before, to provide empirical data in real time that can be very helpful to the research on this aspectual marker in Mandarin, as well as Mandarin linguistics in general. The questionnaire is split into four different parts, separated by the different meanings of *le* that I defined and categorized as: tense, completion, stance/modality, and change of state. In each part, participants are provided instructions and sentence prompts in Mandarin and asked to select the best option based on the content and meaning of those prompts. Analysis of the data confirmed the expectation that speakers are able to use their knowledge and definitions of *le* to see that *le* does hold multiple meanings, and the data also presents evidence for the two-morpheme approach of defining *le*, furthering the semantic knowledge and discussion of this grammatical marker of *le*.

2 Background

Research on Mandarin linguistics is vast, especially when it comes to the research of the particle *le*. Many authors have sought to understand the meaning of *le* itself, since it can contain so many different meanings and functions in the language. Even though significant research has been

done on this subject, there is still some uncertainty to the meaning and contribution of *le* in Mandarin. This is partly due to the many interpretations and readings of *le* that are based on individual researchers' judgments. Because *le* can be used in so many different ways, many authors categorize their research into two arguments: analyzing *le* as one complete, unified morpheme: (Chappell, 2013; Jing-Schmidt et al., 2022; Klein et al., 2000; Lin, 2003; Ljungqvist, 2003, 2007; Lundvik, 2024; Rohsenow, 1978; Shi, 1990), or analyzing *le* with a two-morpheme model containing two separate meanings: (Chao, 1968; Chang, 2009; Chang, 2013; Chief, 2019; Soh and Gao, 2006; Liu, 2015; Li & Thompson, 1981, 1982; Smith, 1994; Smith & Erbaugh, 2005; van den Berg & Wu, 2006; Wang, 2009; Woods, 2018; Wang, 2018; Wu, 2022). Because *le* is frequently used communicatively in conversation, and so much of its meaning depends on context, many of the authors separate verbal *le* as the perfective aspect marker, while categorizing sentence-final *le* as marking a change of state, where *le* triggers a transition from a past state to the current state. It's also argued that sentence-final *le* marks modality, where *le* depicts a speaker's stance toward the topic at hand. Example (4a) shows the usage of *le* in verbal position, where it is placed directly after the verb, which depicts termination of the swimming action. (4b), however, shows *le* in the sentence-final position, placed at the end of the sentence, indicating that the swimming event has started but may or may not have been terminated. In addition, (5) shows *le* in sentence-final position, asserting emphasis to the speakers' stance on the situation, marking epistemic modality (Chang, 2009).

(4) a. 他游了泳。
tā yóu **le** yǒng.
3SG swim LE swim
'He swam.'

b. 他游泳了。
tā yóu yǒng **le**.
3SG swim swim LE
'He started swimming.'

(5). 那就对了。
nà jiù dùi **le**.
that then correct LE
That is correct.

To theorize the semantic properties of *le* in Mandarin, many authors also use a variety of linguistic frameworks to discuss and define *le*, such as cognitive grammar, relevance theory, or model-theoretic semantics.

2.1 Two-morpheme view

Many have examined the historical origin of *le* in order to understand the one morpheme or two-morpheme view, but have yet to solve the question, since the historical data is still interpreted differently and generalized by individual researchers. Chao (1968) argues that the two *le*'s originate from different sources: verbal *le* from liao ('finish', 'complete') and sentential *le* from lai ('come'), while van den Berg & Wu (2006) claim that their data suggests that both types of *le* originate from the same source, namely, liao ('finish', 'complete') (Lundvik, 2024). Wang (2009) discusses *le* through grammaticalization and explains how it shifts from being a full verb with a concrete meaning (completion) to a grammatical particle that functions to mark perfective aspect in sentences. He describes this process as involving both reanalysis (a shift in syntactic function) and analogy (using existing forms to fill new grammatical roles). Wang mentions that there are two different grammaticalization routes that lead to sentence-final *le* and verbal *le*, and acknowledges that the final grammaticalization demonstrates a distinction between the verbal *le* and sentence-final *le*.

Chao's work (1968) is one of the first studies that supports *le* as two morphemes, arguing that verbal-*le* represents a completed action, while sentence-final *le* contains many other possible use cases, but mainly focuses on how it marks change of state or new situation.

Soh and Gao (2006), Liu (2015), Ross and Ma (2006) and Li & Thompson (1981, 1982) claim verbal *le* as a perfective marker that indicates realization and termination/completion of the action, while sentence-final *le* can mark an event currently relevant to discourse, or demonstrate a change from what is expected, or signify an emergence of a new situation, and can mark a change of state. It is also sometimes referred to as a perfect marker. (6b) shows how the addition of verbal *le* indicates the termination of the event, marking perfective aspect (Soh and Gao, 2006).

(6) a. 他游泳。我跑步。

tā yóu yǒng. wǒ pǎo bù.

3SG swim. 1SG run step

'He swims. I run.'

b. 他游了泳。我跑了步。

tā yóu **le** yǒng. wǒ pǎo **le** bù

3SG swim LE swim. 1SG run LE step

'He swam. I ran.'

(7) a. 我要去。

wǒ yào qù

1SG will go

I'm going to go (statement of intention).

b. 我要去了。

wǒ yào qù **le**

1SG will go LE

I'm going after all (I had thought I wouldn't)

In (7a), Li & Thompson (1982) show the meaning of a sentence if *le* was not present, in which the speaker makes a statement of intention to go. In (7b), however, the addition of sentence-final *le* demonstrates a change from what is expected. Before the moment of utterance, the speaker's expectation was that they were not going to go - however, in the current state, at the time of utterance, *le* indicates that the speaker is going now, after all. The sentence in (7a) does not allow for the same kind of reading or context.

Chang (2009) also recognizes verbal *le* as a perfective marker, but the bulk of their work discusses sentence-final *le* as indexing stance (epistemic and evaluative stance) in discourse, expressing emotional intensity, urgency, and new information. (8a) shows epistemic stance, while (8b) shows evaluative stance. These stance uses of *le* can be categorized under different types of social activity in discourse such as assessment, agreement, or concession (Chang, 2009).

(8) a. 没有售后服务就对了。

méi yǒu shóu hóu fú wù jiù duì **le**.

NEG have sale-after service then correct LE.

It's correct that there's no after sale service.

b. 快快乐乐的就好了。

kuài kuài le le de jìu hǎo **le**.

happily then good LE.

It's fine if I am happy.

Chief (2019) explores how Cognitive Linguistics principles can improve the teaching of sentence-final *le* in Mandarin Chinese. He outlines an approach by discussing metaphor and image schema, and how it can be applied to Chinese pedagogy. He also acknowledges verbal *le* as a perfective aspect marker, but focuses on how various patterns of sentence-final *le* form a family of perfect constructions and show prototype effects. Chief claims that sentence-final *le* has the prototypical meaning of change of state, where it requires a prior opposite state and introduces a current relevant state. Therefore, teaching the notions of current relevant state, where a change of state should be taught as the opposition between prior opposite state to current relevant state, is necessary. In (9), Chief argues how adding sentence-final *le* illustrates a change of state, and (a) and (b) are possible current relevant states that can be relevant to the discourse participants.

(9) 她喜欢吃寿司了。

tā xǐ huān chī shóu ci **le**.

she likes eat sushi LE

She likes eating sushi now.

a. We can go to Japanese restaurants together now.

b. She will spend more money on food.

The addition of sentence-final *le* indicates that she likes eating sushi now, but she didn't before. Because of this, (a) and (b) are possible situations relevant to the speakers that have resulted from this new state of her liking sushi. This method can help Mandarin learners understand sentence-final *le* better by focusing on conceptual motivation, leading to a more natural and intuitive usage of *le* in Mandarin.

Similarly, Woods (2018) focuses on the grammaticalization and domain transfer of *le*, and argues that *le* has evolved beyond aspect marking into a multi-functional discourse particle. Woods focuses more on sentence-final *le*, arguing that all the different usages of *le* form a polysemous network, summarized as a cognitive model "something has changed", marking surprise and change in the anticipatory domain.

Wang (2018) distinguishes verbal *le* as a quantity and a telicity marker, that can also be used for perfective marking in some situations. Wang argues that verbal *le* requires an event to have a measurable quality, like a specific duration with a clear endpoint. Wang then defines

sentence-final *le* as a focus marker that emphasizes or highlights certain information in a sentence, making it particularly relevant or contrastive in discourse. He argues that *le* is a focus marker that expresses the assertion of the situation it takes by setting it in contrast with potential alternative situations, and the interpretation of a sentence using sentence-final *le* largely depends on the context, which determines what meaning is expressed through the assertion of the situation. Sentences with sentence-final *le* can have opposite interpretations in different contexts. *Le*, as a focus marker, can indicate a change in state by contrasting it with the previous state. The interpretation of focus depends on the contrast with potential alternatives.

(10) a. 我明白了。

wǒ míngbai **le**.

1SG understand LE

I understand (now).

b. 我明白。

wǒ míngbai.

1SG understand

I understand.

c. 我不明白了。

wǒ bù míngbai **le**.

1SG NEG understand LE

I don’t understand (now).

In 10(a), the change of state from not understanding to understanding now, is made available through the contrast with an opposite previous state, by adding sentence-final *le*. Additionally, *le* emphasizes the current state when used to correct a wrong assumption.

(11) 你都80分了。

nǐ (dōu) 80 fēn **le**.

2SG already 80 point LE.

You already have 80 points. (It’s not bad, compared with me.)

This example demonstrates that the interpretation of 80 points not being a bad grade is a conversational effect focusing on the fact that you have 80 points. While the sentence position of both verbal *le* and sentence-final *le* is usually defined as such, there are situations where

syntactic reordering of phrases can occur. Therefore, Wang argues to distinguish the two versions of *le* by their grammatical functions and be referred to as quantity *le* and focus *le* instead.

Smith (1994) and Smith & Erbaugh (2005) analyze *le* through the two-component theory of aspect, which distinguishes between the situation type and the viewpoint. The situation type contains the aspectual type of the sentence, such as states, activities, accomplishments, etc., while the viewpoint conveys its temporal perspective, such as perfective, progressive, etc. Smith explains how aspect markers modify the situation types - more specifically, how verbal *le* marks boundedness of an event, or completion of an event. Smith further explains how *le* behaves differently depending on the aspectual class of the verb, such as states, activities, accomplishments, or achievements. The authors analyze the relation between a designated perspective time, or reference time, and situation time. Specifically, *le* encodes a bounded event, which isn't necessarily completed, included within SitT(situation time); at RT(reference time). Furthermore, *le* focuses on either the starting point of a state, where there is no specific endpoint, or the final endpoint of an action or event. This analysis reinforces the idea that Mandarin relies on aspect and discourse structure rather than using tense marking to place events on the timeline. Additionally, Smith excludes sentence-final *le* from this analysis as she acknowledges it is primarily used to convey speaker attitude.

Chang (2013) explores how young Mandarin-speaking children learn to use the aspect marker *le*. The study presents evidence of how two children naturally use *le* in their speech and challenges the prototype theory that children do not distinguish between different types of verb meanings when learning aspect markers. The data shows that as soon as children produce *le*, they use it in different syntactic positions, indicating children can differentiate between verbal *le* and sentence-final *le,* and therefore argues for a separation between the two.

2.2 One-morpheme view

Other linguists try to define *le* with a unified approach, arguing that it only contains one meaning, regardless of its sentence position. Klein et al (2000) discusses several particles, like *le*, *guo*, *zhe*, *zai*. They claim that previous literature attempts to define these particles, but no definition is sufficiently precise enough to narrow it down to one definition. Focusing on *le*, they say that instead of focusing on how it marks a completed action, they argue that *le* indicates that the event is bound within a specific time frame—what they call "Topic Time" (the period under discussion). So *le* does not always imply completion but rather signals that an event is relevant to

the reference time. Furthermore, they also argue that *le* is tied to assertion rather than purely aspect. In different contexts, *le* shifts the focus of a sentence by marking new information that the speaker wants to highlight. Overall, they propose *le* is more a discourse function than a strict grammatical marker of past actions. In (12), the source phase is the activity of writing a letter, and the target phase is that this activity, during which the letter is written, is finished. Both phases overlap with TT (Topic Time), which are within the scope of assertion marked by *le*.

(12) 张三写完了心。

Zhangsan xǐe-wán-**le** xìn.

Zhangsan write-finish-LE letter

Zhangsan finished writing the letter.

Chappell (2023) argues that *le* has one core meaning. However, *le* can fulfil different discourse functions in different syntactic positions. As a verbal suffix, functioning sentence-internally, -*le* bounds events. In sentence-final position, it bounds episodes in discourse. Sentence-final *le* functions as an episode-boundary marker, outlining distinct segments within a narrative. This usage facilitates the organization of events, guiding listeners through the progression of a story. Lundvik (2024) uses cognitive grammar and empirical data from native speakers' judgments to propose a unified meaning of *le*, identifying "modal certainty", explaining both verbal *le* and sentence-final *le* functions under a single semantic model. Lundvik's (2024) semantic model defines the modal schema as "Epistemic judgment of certainty in regard to the subject of thought", and the lower level schemas as "basic/non-emphatic assertion" and "emphatic assertion". From the non-emphatic assertion, it extends into the temporal domain, which includes the perfectivity and change of state senses, as well as the modal domain, which includes the attitude extension. He argues that the modal properties are the primary use cases of *le*. In (13), he argues that verbal *le* emphasizes the completion of the action *going* by focusing on the final endpoint of the action, and represents "absolute certainty".

(13) 他去了非常。

tā qù **le** fēijīchǎng.

3SG go LE airport

He went to the airport.

Rohsenow (1978) combines both verbal and sentence-final *le* to define it as expressing existence of the state or action. Shi (1990) **c**riticizes the two-morpheme model and argues that *le*

always signals "relative anteriority", regardless of position. Lin (2003) rejects *le* as a tense marker, and instead argues that verbal *le* is an event realization operator, asserting that an event or state has occurred and is relevant within a given reference time, indirectly contributing to temporality. While Lin does state that both verbal *le* and sentence-final *le* share a core meaning, they also acknowledge that sentence-final *le* differs slightly in meaning, entailing event realization that brings about the result state.

Some linguists argue that *le* acts as a boundary - Ljungqvist (2003, 2007) uses relevance theory to argue that *le* has one core meaning: a single pragmatic marker, with a core semantic feature boundary. The boundary can be temporal, representing the initial or final point of an event, or attitudinal, contributing to the modal or speaker stance of an utterance. She emphasizes that *le* is a context-dependent marker, and context decides whether it functions as verbal *le* or sentence-final *le*. Jing-Schmidt et al. (2022) discusses how verbal *le* marks the Final Boundary of an Event, while sentence-final *le* marks the Initial Boundary of an Event.

The disagreement in the two approaches to defining *le* is due to all the different ways in which it can be used and expressed, which has been difficult to simply categorize, consolidate, and broadly define, since many of the different use cases overlap. Both camps are aware that *le* has multiple functions, resulting in the attempts to categorize and define these meanings. The one-morpheme approach labels *le* as a single morpheme with one meaning or a polysemous morpheme with multiple, similar meanings, regardless of syntactic position. In contrast, the two-morpheme approach labels verbal *le* and sentence-final *le* as two separate, homophonous morphemes with different meanings. While the analyses diverge, some of the most common usages of *le* are defined as a perfective aspect marker, a discourse stance marker, and a change of state marker. However, the one morpheme camp argues that these meanings should be consolidated since they all share the same underlying meaning, while the two-morpheme camp claims these meanings are distinct. The present study uses information from Mandarin speakers to further define and categorize the different meanings of *le,* as well as to add qualitative data to support the two-morpheme approach in analyzing *le*.

3 Study

3.1 Methodology

In order to gauge many of the different meanings of *le*, I designed a questionnaire survey to probe speakers' linguistic judgments and preferences of Mandarin. The survey presents *le* in its

various phrase-positions, semantic contexts, and discourse uses. Verbal *le* marks tense and aspect, while sentence-final *le* contains many more meanings, including uses that expand on and are not limited to time, such as emphasis, emotion, and conversation. This variety of meaning coincides with many of the authors that share the two-morpheme view, and that *le* is used in a multitude of ways, and not just a tense and aspect marker. I use semantic elicitation techniques, providing questions and statements in Mandarin and minimal pairs to measure participants' interpretations of *le*. Because the meaning of *le* is so context-based, asking participants to share their own semantic interpretations in real time to select answers is crucial to this study. This survey design probes the participant on their instincts of what they already know, and helps extract a more accurate range of meaning. I chose to focus on four different usages of *le*, so I split the questionnaire into four parts, with each part representing a different way of using *le* in Mandarin. This way, the meaning of *le* can be separated into different usages, and the analysis of each meaning or usage is understood better within each context. Using my knowledge as a native speaker combined with research on this topic, I was able to categorize and define four different meanings in hopes that participants would be able to see these meanings as well. If *le* has multiple meanings depending on syntactic position and context, then we expect participants to also understand that *le* has different meanings and functions in each part and to select those answers accordingly.

In each part of the questionnaire, the questions are combined with minimal pairs in order to isolate the different uses and different positions of *le*. If the minimal pairs contain the same verb and content, but differ only in the positioning of *le*, participants will be able to define the meaning more easily, without any added factors that could cause confusion. Each part represents an attempt to distinguish distinct usages of *le.* In part 1, I focus on tense, since most speakers without specific linguistic knowledge would define *le* this way. In part 2, I focus on event completion and how verbal *le* can be used to mark completion of an action or event, but sentence-final *le* might not indicate completion. In part 3, I focus on how *le* is used for stance and emphasis. Finally, in part 4, I focus on change of state, and how the usage of *le* can indicate a change of state from a previous state, and whether verbal *le* or sentence-final *le* is a stronger indicator of this. Participants were given instructions for each part in both Mandarin and English. Then, in each part, statements in Mandarin using *le* in different positions were provided, and participants were then provided a question about the content of the sentences, and asked to

choose the best answer from different options that included variations of meaning. The survey was sent to two native Mandarin speakers to make edits and ensure speaker understanding, as well as translation edits. It was then entered in Qualtrics, where I randomized the order of appearance for each question within each part, as well as randomizing the order of answer options. Before sending to participants, I took the survey with the two native speaker consultants, and labeled the answers we interpreted as the best answer as "expected", and the answers not chosen were labeled as "unexpected". I then coded each multiple choice answer in the software to depict those "expected" and "unexpected" answers. Expected/correct answers were coded with a "1", while unexpected/incorrect answers were coded with a "0", to easily extract and gather the data and percentages of answers. As a native speaker, I did not want to rely on my own intuition of the different meanings of *le*, so the data was extracted as "expected" and "unexpected" to compare how participants' intuition and knowledge coincided with the meanings of *le* that my consultants and I perceived to be the most expected reading.

3.2 Participants

The participants consisted of 115 Mandarin speakers ages 18-65+; the majority were native speakers, and a couple were intermediate, fluent, or beginner speakers. The survey was created on Qualtrics, initially sent out to local, known Mandarin speakers, then shared from there. Everyone has at least high school degrees, 112/115 have college degrees, and most have higher than Bachelor's degree, however, this was not solicited as demographic information, and was noted by the participants.

3.3 Demographics:

The majority of participants were native speakers, which consisted of 88.7% of all participants. Then, 5.22% were fluent speakers, 5.22% were intermediate, and 1 was a beginner. The age group with the highest percentage of participants, 55-64, consisted of 44.35% of all participants, followed by 45-54, with 28.7%, then 65+ with 13.91%, then 25-34 with 5.22%, then 18-24 with 4.35%, finally 35-44 with 3.48%.

3.4 Design and Procedure

The survey contains 29 questions total, split into four parts, with three demographic questions: age, geographical location, and speaker level. Part 1 has 5 questions, Part 2 has 10 questions, Part 3 has 10 questions, and Part 4 has 4 questions. Each question and answer option has both an English and Chinese translation. The survey was conducted online via Qualtrics.

In part 1, the participants were given sentences that focused on tense, probing whether or not *le* can be used to indicate when an event happens, with minimal pair sentences including *le* in the verbal position vs sentence final position. I chose 5 different statements in Mandarin, all were simple sentences with the Subject-Verb-Object structure, so speakers would understand the sentences with ease. Three of the sentences are a minimal triplet with the same verb, with two of the sentences containing *le* in different syntactic positions, both verbal and sentence-final, and one of the sentences has *le* in the sentence-final position with an added classifier. The next two sentences are a minimal pair using a different verb, with one sentence using *le* in the verbal position and one sentence using *le* in the sentence-final position. Participants are given multiple choice options to select at what time an event occurs, in regards to tense. Q1.1 shows an example from Part 1, the tense category.

Sample Question from Part 1

Q1.1 我买了水果。

wǒ mǎi **le** shuǐ guǒ.

1SG buy LE fruit

At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。

a. Buying event taking place in the past. 买这个行为是过去发生的。
b. Buying event started in the past and continuing up to the present. 买这个行为是过去开始的并持续至现在。
c. Buying event taking place in the present. 买这个行为是现在发生的。
d. Buying event taking place in the future. 买这个行为将要发生。

In part 2, the questions focused on completion. Participants are shown a sentence, and are given 2 options about the sentence content, asking whether the action is completed or not. These sentences are minimal pairs, again, with *le* in verbal vs sentence final position.

Sample Question from Part 2

Q2.1 你睡觉了么？

nǐ shùi jiào **le** me?

1SG sleep LE me

Has the sleeping event been completed? 睡觉这个状态完成了吗？

a. Yes, the sleeping event has been completed. 是的, 睡觉已经完成了.
b. It might not indicate that the sleeping event has been completed. 睡觉不一定完成了.

Part 3 is focused on emotion and modality, where minimal pair sentences either containing *le* in the sentence-final position or without *le* are presented, and participants have to choose from multiple choice options about the content and meaning of the sentences, choosing between a factual statement and a statement with emotional connotation.

Sample Question from Part 3

Q3.1 你的房间太乱了。

nǐ de fáng jiān tài luàn **le** .

1SG of room too messy LE

a. This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。
b. This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度(不满)。

Part 4 focuses on change of state, where participants are given two minimal pair sentences containing *le* in the verbal position vs sentence-final position, and asked to choose which sentence implies a change of state from a previous state.

Sample Question from Part 4

Q4.3 Which sentence more strongly implies that I know his name now, but I didn't know it before? 以下哪个句子更表示出我现在知道了他的名字, 但以前不知道？

a. 我知道了他的名字。
   wǒ zhī dào **le** tā de míng zi.
   1SG know LE 3SG POSS name
b. 我知道他的名字了。
   wǒ zhī dào tā de míng zi **le**.
   1SG know 3SG POSS name LE

Each question is randomized within each part, with all multiple choice options randomized as well. The structure of these 4 parts and questions is used to dissect different uses and meanings of *le*, by separating each use case and meaning by part to hopefully probe the

participant to also use their own knowledge to see the different ways *le* is utilized. The design hopes to better categorize the ways *le* is commonly used in conversation.

3.5 Data

Once the survey questionnaire was completed by 115 participants in Qualtrics, the results and data were exported to Numbers, with the questions and the correlated answers from all participants labeled with a “1” as “expected" and “0” as “unexpected”, based on my previously established coding methodology. The proportions, averages, and percentages of answers correct were then calculated via Numbers.

4 Results

Before analyzing my data, I was expecting participants to understand that *le* has multiple use cases and meanings, and to start to think about how it is used in different contexts with the sentences and examples given to them. We should expect participants to mostly answer “expected”, or choose the answers that corroborate with my consultants and I’s native speaker intuition. This would show that *le* can contain multiple meanings, which would show high accuracy percentages overall. Because questions were split into parts, I also expected participants to begin to understand that each part included a different distinct use case of *le*, so I expected participants to select a similar amount of expected answers in each part, which would show similar accuracy percentages of the questions within each part.

I expected part 1 and part 3 to be the easiest for participants, and expected the rate of expected answers to be highest in that section, since tense is a concept that is widely known and understood. Similarly, I also believed using *le* to signal emphasis and modality was common, since this is a common way of indicating expressiveness in discourse among speakers. Additionally, I expected part 2 and part 4 to be more difficult, as it requires some metalinguistic thought and knowledge that is difficult to elicit. Overall, for all 29 questions, there was an average of 69.15% accuracy rate. 23 out of 29 questions have an accuracy rate of over 50%, which is in line with the expectation that the majority of participants will select expected answers, while 6 out of 29 questions have an inaccuracy rate of under 50%. Participants selected the highest rate of expected answers in part 4, with an average of 86.09%, then part 1 with 71.83%, followed by part 3 with 65.39%, and the lowest rate of expected answers in part 2 with 64.78%. The accuracy rate overall coincides with what was expected, with the exception of part 4 having the highest amount of expected answers, instead of the expected lower amount.

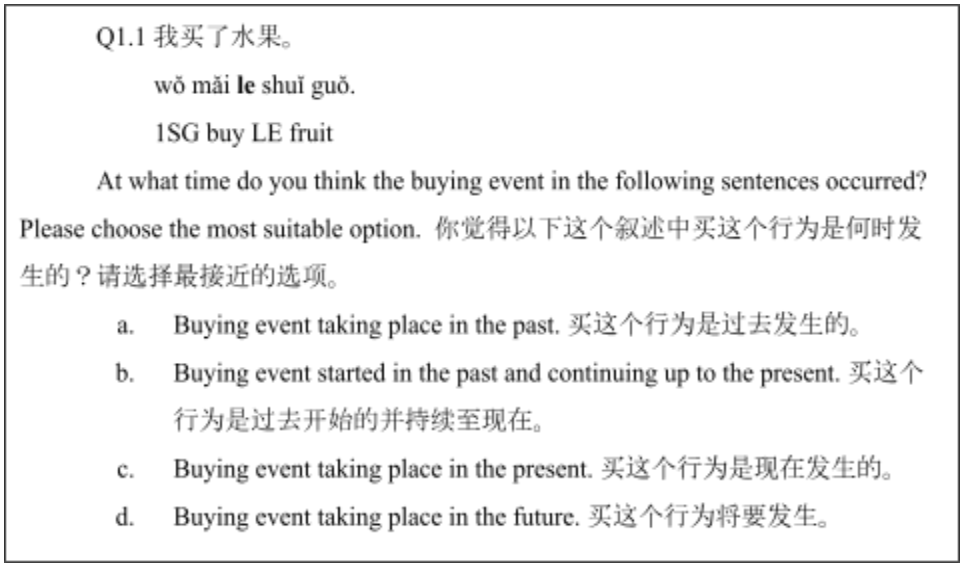
In part 1, the data shows an average of 71.83% questions were answered with the expected answers.

Part 1: Tense		
	Expected	**Not Expected**
Question 1.1 我买了水果。 **wǒ mǎi le shuǐ guǒ.** 1SG buy LE fruit I bought fruit. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。	Buying event taking place in the past. 买这个行为是过去发生的。 91.30%	Buying event taking place in the future. 买这个行为将要发生。 8.70%
Question 1.2 我买水果了。 **wǒ mǎi shuǐguǒ le**. 1SG buy fruit LE I have bought fruit. I buy/am buying fruit. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。	Buying event taking place in the past. 买这个行为是过去发生的。 86.96%	Buying event taking place in the future. 买这个行为将要发生 13.04

Part 1: Tense		
Question 1.3 我买三种水果了。 **wǒ mǎi sān zhǒng shuǐguǒ le** . 1SG buy three CLASS fruit LE I have bought three kinds of fruit. I buy/am buying three kinds of fruit. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。	Buying event taking place in the past. 买这个行为是过去发生的。 70.43%	Buying event taking place in the future. 买这个行为将要发生 29.57%
Question 1.4 你瘦了一点。 **nǐ shòu le yī diǎn.** 2SG skinny LE a little You got a little skinnier. At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中减重这个事情是何时发生的？请选择最接近的选项。	Losing weight event started in the past and continuing up to the present. 减肥这个行为是过去开始的并持续至现在。 46.1%	Losing weight event taking place in the future. 减肥这个行为将要发生。 53.9%
Question 1.5 你瘦一点了。 **nǐ shòu yī diǎn le**.	Losing weight event started in the past and continuing up to the	Losing weight event taking place in the future. 减肥这个行为将要发生。

Part 1: Tense		
2SG skinny a little LE You are a little skinnier. At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中减肥这个事情是何时发生的？请选择最接近的选项。	present. 减肥这个行为是过去开始的并持续至现在。 64.35%	35.65%

Q1.1 has the highest expected answer percentage, with 70.43% selecting the expected answer, and 29.57% selecting the unexpected answer.



Q1.1 我买了水果。

wǒ mǎi **le** shuǐ guǒ.

1SG buy LE fruit

At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。

a. Buying event taking place in the past. 买这个行为是过去发生的。
b. Buying event started in the past and continuing up to the present. 买这个行为是过去开始的并持续至现在。
c. Buying event taking place in the present. 买这个行为是现在发生的。
d. Buying event taking place in the future. 买这个行为将要发生。

Here, most participants selected the expected option A. This was expected, as verbal *le* here marks perfective aspect to indicate that the buying action to be completed, which can indicate the event has already taken place, in the past.

Q1.4 has the lowest expected answer percentage, with more than half of the participants answering incorrectly.

Q1.4 你瘦了一点。

nǐ shòu **le** yī diǎn.

1SG skinny LE a little

At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中减肥这个事情是何时发生的？请选择最接近的选项。

a. Losing weight event taking place in the past. 减肥这个行为是过去发生的。
b. Losing weight event started in the past and continuing up to the present. 减肥这个行为是过去开始的并持续至现在。
c. Losing weight event taking place in the present. 减肥这个行为是现在发生的。
d. Losing weight event taking place in the future. 减肥这个行为将要发生。

46.1% of the participants selected option C, where the state takes place in the future, while the rest chose the expected option B, where the action started in the past and is continuing up to the present. Clearly, this sentence with the *le* in the verbal position proves more ambiguous temporally. Since verbal *le* marks the losing weight event to be completed, the expected answer would be B, because it looks like the person has lost weight at some point in the past that has continued into the present moment. It was not expected that most participants defined this sentence to have taken place in the future. Although verbal *le* is often argued to mark perfectivity and in some cases, past tense, my data shows otherwise, with participants preferring the future reading. While this is counter to my interpretation, it does show that participants recognize that this event is not a finished event in the past, but is continuing in the present into the future at the time of utterance, with no clear endpoint. Here, the definition of the sentence seems to be more in line with the verb itself, as the losing weight verb is atelic with no endpoint, instead of the entire event as a whole. This shows that participants understand that verbal *le* can mark aspect, since they recognize that the losing weight has not finished, but it does not convey tense as clearly, since the sentence does not explicitly signal the state occurring in the future. However, in Q1.5, where the minimal pair is shown with *le* in the sentence-final position instead, more participants accurately selected option B, with 64.35% expected responses. This statistic shows that most participants preferred the present perfect answer for the sentence containing sentence-final *le*, where the state started in the past and is continuing at the time of utterance, showing that *le* isn't only always used to denote past tense. The usage of sentence-final *le* here

focuses on the entire sentence and event as a whole, so participants were able to more accurately determine the temporal action of the sentence.

In part 2, an average of 64.78% were answered with the expected response.

Part 2: Completion		
	Expected	**Not Expected**
Question 2.1 你睡觉了么？ **nǐ shùijiào le me?** 2SG sleep LE Q? Have you slept? Has the sleeping event been completed? 睡觉这个状态完成了吗？	It might not indicate that the sleeping event has been completed. 睡觉不一定完成了. 75.65%	Yes, the sleeping event has been completed. 是的，睡觉已经完成了. 24.35%
Question 2.2 你睡了觉么？ **nǐ shùi le jiào me?** 2SG sleep LE sleep Q? Did you sleep? Has the sleeping event been completed? 睡觉这个状态完成了吗？	Yes, the sleeping event has been completed. 是的，睡觉已经完成了. 46.09%	It might not indicate that the sleeping event has been completed. 睡觉不一定完成了. 53.91%
Question 2.3 我们吃了晚饭。 **wǒ men chī le wǎn fàn.** 1PL eat LE dinner We ate dinner. Has the eating event been completed? 吃晚饭完成了吗？	Yes, the eating event has been completed. 是的，晚饭已经吃完。 93.91%	It might not indicate that the eating event has been completed. 晚饭不一定吃完了。 6.09%

Part 2: Completion		
Question 2.4 我们吃晚饭了。 **wǒ men chī wǎn fàn le.** 1PL eat dinner LE We are eating dinner. Has the eating event been completed? 吃晚饭完成了吗？	It might not indicate that the eating event has been completed. 晚饭不一定吃完了。 53.91%	Yes, the eating event has been completed. 是的，晚饭已经吃完。 46.09%
Question 2.5 他去了公园。 **tā qù le gōngyuán.** 3SG go LE park He went to the park. Has the arriving event been completed? 去到公园这个行动完成了吗？	Yes, the arriving event has been completed. 是的，已经到达了。 53.91%	It might not indicate that the arriving event has been completed. 不一定到达公园了。 46.09%
Question 2.6 他去公园了。 **tā qù gōngyuán le.** 3SG go park LE He is going to the park. Has the arriving event been completed? 去到公园这个行动完成了吗？	It might not indicate that the arriving event has been completed. 不一定到达公园了。 79.13%	Yes, the arriving event has been completed. 是的，已经到达了。 20.87%
Question 2.7 我读了那本书。 **wǒ dú le na běn shū.** 1SG read LE that CLASS book I read that book. (and am finished with it.)	Yes, reading the whole book has been completed. 是的，全书已读完。 64.35%	It might not indicate that the whole book has been completed. 全书不一定读完了 35.65%

Part 2: Completion		
Has reading the whole book been completed? 全书阅读完成了吗？		
Question 2.8 我读那本书了。 **wǒ dú na běn shū le.** 1SG read that CLASS book LE I read that book. (and could not be finished with it yet.) Has reading the whole book been completed? 全书阅读完成了吗？	It might not indicate that the whole book has been completed. 全书不一定读完了 76.52%	Yes, reading the whole book has been completed. 是的，全书已读完。 23.48%
Question 2.9 他来了你家么? **tā lái le nǐ jiā me?** 3SG come LE 2SG home Q? Has he been to your home (and completed the visit?)	This question is asking if he has been to your home and has completed the visit. 这个问题是问他有没有到过你家（已完成探访）。 66.96%	This question is asking if he has come to your home and hasn't completed the visit. 这个问题是问他到了你家但还没有完成探访。 33.04%
Question 2.10 他来你家了么? **tā lái nǐ jiā le me?** 3SG come 2SG home LE Q? Has he come to your house (and has not completed the visit?)	This question is asking if he has come to your home and hasn't completed the visit. 这个问题是问他到了你家但还没有完成探访。 45.22%	This question is asking if he has been to your home and has completed the visit. 这个问题是问他有没有到过你家（已完成探访）。 54.78%

Most of the results in part 2 coincide with a lot of the literature that defines verbal *le* as a marker of perfectivity or completion of an event, with most participants selecting the interpretation that verbal *le* indicates completion of an event, as well as understanding that sentences with

sentence-final *le* might not indicate completion of the event. Q2.3 had the highest accuracy rate, with 93.91% expected responses, and 6.09% of unexpected responses.

Q2.3 我们吃了晚饭。

wǒ men chī **le** wǎn fàn.

1PL eat LE dinner

Has the eating event been completed? 吃晚饭完成了吗？

a. Yes, the eating event has been completed. 是的，晚饭已经吃完。

b. It might not indicate that the eating event has been completed. 晚饭不一定吃完了。

Here, the majority of the participants selected option A, understanding that verbal *le* indicates the completion of the eating event. The minimal pair, Q2.4, with *le* in sentence-final position, has 53.91% expected responses, and 46.09% unexpected responses.

Q2.4 我们吃晚饭了。

wǒ men chī wǎn fàn **le**.

1PL eat dinner LE

Has the eating event been completed? 吃晚饭完成了吗？

a. Yes, the eating event has been completed. 是的，晚饭已经吃完。

b. It might not indicate that the eating event has been completed. 晚饭不一定吃完了。

More than half of participants selected the expected option B, understanding that sentence-final *le* in this context might not indicate completion of the eating event. This shows the difference in verbal *le* and sentence-final *le*, where the meaning of the sentence changes based on the position of *le*.

Q2.2, Q2.4, Q2.5, and Q2.10 all had the lowest accuracy rate, with percentages near or under 50%. Q2.2 and Q2.5 contain sentences with *le* in the verbal position, while Q2.4 and Q2.10 contain sentences with *le* in the sentence-final position.

Q2.2: 你睡了觉么？

nǐ shùi **le** jiào me?

3SG sleep LE sleep Q?

Has the sleeping event been completed? 睡觉这个状态完成了吗？

a. Yes, the sleeping event has been completed. 是的，睡觉已经完成了.

b. It might not indicate that the sleeping event has been completed. 睡觉不一定完成了.

46.09% of participants selected option B, the unexpected answer, while the rest selected the expected answer A. Here, the verbal *le* indicates that the sleeping event has been completed, since the sentence is defined as "did you sleep?", where the sleeping event is implied as a completed, whole event, and the question is asking if the sleeping event has been finished or not at the time of utterance. The minimal pair in Q2.1, however, uses sentence-final *le* in the same sentence, which is more so defined as "are you sleeping?", or "have you gone to sleep yet?", which might not indicate that the sleeping event has been completed - it is more implying that the sleeping event has either started to take place and hasn't finished yet at the time the speaker asked, or hasn't started at all. For example, this question could be asked via text message, where the speaker is checking in on the receiver who is not currently with them. Of course, no response would indicate the receiver is sleeping. Even without context, it alludes to the sleeping event that is expected to be done at some point, but has not yet. The large majority (75.65%) of respondents selected the expected answer in Q2.1, showing that the majority of participants understood that sentence-final *le* does not necessarily indicate completion of the event. In contrast, the rate of expected answers dropping for Q2.2 (53.91%) shows that speakers are less likely to understand that an action may not have been completed when verbal *le* is used. It seems that using verbal *le* in Q2.2 with the specific verb 'to sleep' is harder to distinguish as a separate meaning from Q2.1 using sentence-final *le*, since in some use cases, without context, both sentences could have the same meaning. Below in Q2.10, 45.22% selected the expected answer, option A, and 54.78% selected the unexpected answer, option B.

Q2.10: 他来你家了么?

tā lái nǐ jiā **le** me?

3SG come 2SG home LE Q?

a. This question is asking if he has come to your home and hasn't completed the visit. 这个问题是问他到了你家但还没有完成探访。

b. This question is asking if he has been to your home and has completed the visit. 这个问题是问他有没有到过你家(已完成探访)。

Here, the question containing sentence-final *le* is asking if he has come to your house and hasn't completed the visit yet. This question is asking whether he has arrived to your home yet, which implies that the visit has yet to be completed. In Q2.9, however, the minimal pair with verbal *le* is asking if he has been to your home and has completed the visit. This question is more asking if he has been to your house before, or recently. The sentence-final *le* in Q2.10 depicts ambiguity in the completion of the visit at the time of utterance, focusing more on the arrival part of the visit within a timeframe, or the starting point of the visit, implying that he is expected to arrive before the time the question is being asked. There is ambiguity on whether he has left yet at the time of the question, and doesn't imply a firm completion of the visit. On the other hand, verbal *le* in Q2.9 depicts completion of the visit in a more general sense, with no reference time or beginning and ending, focusing more on whether this visit has ever happened at all, with no specific range of time. If the answer to this question is either yes or no, then the visit has been either completed or not completed, with no other ambiguous meaning. The majority of participants answering B for Q2.10 indicates that the meaning of the statement using sentence-final *le* is not as distinct from the meaning of the statement using verbal *le*, and shows that the distinction between whether the visit is completed or not is harder to grasp. Additionally, the focus on the arrival vs the event is not shown in the data. However, verbal *le* is more clearly understood by participants as a perfective marker, marking completion of an event with no restraints.

In part 3, an average of 65.39% of questions were answered as expected. The expectation is that sentences containing *le* will be selected as sentences containing emotion.

Part 3: Modality/Stance		
	Expected	**Not Expected**
Question 3.1 你的房间太乱了。 **nǐ de fángjiān tài luàn le.** 2SG POSS room too messy LE Your room is too messy.	This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度（不满)。 84.35%	This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。 15.65%
Question 3.2 你的房间太乱。 **nǐ de fángjiān tài luàn.** 2SG POSS room too messy. Your room is too messy.	This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。 61.74%	This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度（不满)。 38.26%
Question 3.3 你昨天去看电影了。 **nǐ zúotiān qù kàn diànyǐng le.** 2SG yesterday go see movie LE You went to the movies yesterday.	This sentence indicates some emotion towards the fact that you went to the movies yesterday. 这句话还表示出对你昨天去看电影这事的态度。 31.30%	This sentence describes the fact that you went to the movies yesterday. 这句话叙述了你昨天去看电影这个事。 68.70%
Question 3.4 你昨天去看电影。 **nǐ zúotiān qù kàn diànyǐng.** 2SG yesterday go see movie. You went to the movies yesterday.	This sentence describes the fact that you went to the movies yesterday. 这句话叙述了你昨天去看电影这个事。 86.09%	This sentence indicates some emotion towards the fact that you went to the movies yesterday. 这句话还表示出对你昨天去看电影这事的态度。 13.91%
Question 3.5 他在上班。 **tā zài shàng bān.**	This sentence describes the fact that he is at work. 这句话叙述了他在上班这个事。	This sentence indicates some emotion towards the fact that he is working. 这句话还表示出对

Part 3: Modality/Stance		
he is at work. He is working.	93.91%	他在上班这个事的态度。 6.09%
Question 3.6 他在上班了。 **tā zài shàng bān le.** he is at work LE He is working.	This sentence indicates some emotion towards the fact that he is working. 这句话还表示出对他在上班这个事的态度。 39.13%	This sentence describes the fact that he is at work. 这句话叙述了他在上班这个事。 60.87%
Question 3.7 今天感觉很好了。 **jīn tiān gǎn júe hén hǎo le.** today feels very good LE I feel good today.	This sentence indicates some emotion towards the fact that I feel good today. 这句话还表示出对我感觉很好这事的态度。 52.17%	This sentence describes the fact that I feel good today. 这句话描述了我感觉很好这个事实。 47.83%
Question 3.8 今天感觉很好。 **jīn tiān gǎn júe hén hǎo.** today feels very good. I feel good today.	This sentence describes the fact that I feel good today. 这句话描述了我感觉很好这个事实。 73.04%	This sentence indicates some emotion towards the fact that I feel good today. 这句话还表示出对我感觉很好这事的态度。 36.96%
Question 3.9 菜有点儿咸了。 **cài yóu diǎn er xián le.** dish is little salty LE The dish is a little salty.	This sentence indicates some emotion towards the fact the dish is salty. 这句话还表示出对菜稍咸这事的态度。 57.39%	This sentence describes the fact the dish is salty. 这句话讲述了这个菜太咸这个事实。 42.61%
Question 3.10 菜有点儿咸。 **cài yóu diǎn er xián.** dish is little salty The dish is a little salty.	This sentence describes the fact the dish is salty. 这句话讲述了这个菜太咸这个事实。 74.78%	This sentence indicates some emotion towards the fact the dish is salty. 这句话还表示出对菜稍咸这事的态度。 25.22%

Q3.1 and Q3.2 are examples of a minimal pair that have the highest combined accuracy rate. Q3.1 contains a sentence with *le* in the sentence-final position, while Q3.2 contains a sentence without *le.*

Q3.1 你的房间太乱了。

nǐ de fángjiān tài luàn **le**.

2SG POSS room too messy LE

a. This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。

b. This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度(不满)。

In Q3.1, 84.35% of participants selected expected option B, and were able to understand that the addition of *le* indicates some emotion towards the content in the sentence, indicating a stance towards the utterance. This usage of *le* can be seen as a discourse marker, and emphasizes the speaker's viewpoint "through a cooperative effort between the speaker and the hearer" (Chang, 2009). Similarly, in Q3.2, 61.74% of participants selected expected option A, and were able to understand that the same sentence without *le* does not contain the emotion that Q3.1 contains.

Q3.2 你的房间太乱。

nǐ de fáng jiān tài luàn.

2SG POSS room too messy

a. This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。

b. This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度(不满)。

Q3.3 and Q3.6 have the lowest rate of expected answers, with the lowest accuracy out of all 29 questions as well, under 40%. Both Q3 and Q6 display sentences with *le* in the sentence-final position.

Q3.3: 你昨天去看电影了。

nǐ zúo tiān qù kàn diàn yǐng **le**.

2SG yesterday go see movie LE

a. This sentence describes the fact that you went to the movies yesterday. 这句话叙述了你昨天去看电影这个事。

b. This sentence indicates some emotion towards the fact that you went to the movies yesterday. 这句话还表示出对你昨天去看电影这事的态度。

A surprisingly low 31.30% of participants selected expected answer B, while the rest selected the unexpected answer A. The addition of *le* in the sentence-final position usually conveys some emotion from the speaker towards the situation at hand, which most participants did not think was the case. However, in Q3.4, which displays the same sentence but without the *le*, participants answered the same, selecting option A, indicating that the sentence without sentence-final *le* also does not convey emotion. Similarly, in Q3.6, 39.13% of participants selected expected answer B, while the rest selected the unexpected answer A.

Q3.6: 他在上班了。

tā zài shàng bān **le**.

3SG is go work LE

a. This sentence describes the fact that he is at work. 这句话叙述了他在上班这个事。

b. This sentence indicates some emotion towards the fact that he is working. 这句话还表示出对他在上班这个事的态度。

The high percentage of unexpected answers in these questions can be due to the fact that no context was presented with the sentence prompts. Discourse and conversation, especially in Mandarin, is very context-based, which could explain the participants' interpretation of these statements to be without emotion. Without the context of the speaker's conversation, it is more difficult to see the emotion and stance that *le* can index.

In Part 4, an average of 86.09% of questions were answered as expected. The expectation is that the majority of participants will choose answer options containing sentence-final *le*, which is shown by the data results. This provides evidence for the fact that sentence-final *le* more implies a change of state from what was expected.

Part 4: Change of State		
	Expected Answer	**Unexpected Answer**
Question 4.1 Which sentence more strongly implies that I know how to swim now, but I didn't before? 以下哪个句子更表示出我现在我会游泳但以前不会？	我会游泳了。 **wǒ hùi yóuyǒng le.** 1SG can swim LE I can swim (now). 100%	我会游泳。 **wǒ hùi yóuyǒng.** 1SG can swim I can swim. 0.00%
Question 4.2 Which sentence more strongly implies your dress is shorter than it was before? 以下哪个句子更表示出你的裙子比以前短？	你的裙子短一点了。 **nǐ de qún zi duǎn yī diǎn le.** 2SG POSS dress short a little LE Your dress is a little short. 74.78%	你的裙子短了一点。 **nǐ de qún zi duǎn le yī diǎn.** 2SG POSS dress short LE a little Your dress is a little short. 25.22%
Question 4.3 Which sentence more strongly implies that I know his name now, but I didn't know it before? 以下哪个句子更表示出我现在知道了他的名字, 但以前不知道？	我知道他的名字了。 **wǒ zhī dào tā de míng zi le.** 1SG know his POSS name LE I know his name (now). 80.00%	我知道了他的名字。 **wǒ zhī dào le tā de míng zi.** 1SG know LE his POSS name I know his name. 20.00%
Question 4.4 Which sentence more strongly implies that I got into college	我上大学了。 **wǒ shàng dà xúe le.** 1SG go college LE	我上了大学。 **wǒ shàng le dà xúe.** 1SG go LE college

Part 4: Change of State		
recently, but I didn't before? 以下哪个句子更表示出我现在上大学以前没有？	I got into college. 89.57%	I got into college. 10.43%

Q4.1 has the highest rate of expected answers, with 100% of participants selecting expected answer A.

Q4.1 Which sentence more strongly implies that I know how to swim now, but I didn't before? 以下哪个句子更表示出我现在我会游泳但以前不会？

a. 我会游泳了。
wǒ hùi yóuyǒng **le**.
1SG can swim LE

b. 我会游泳。
wǒ hùi yóuyǒng.
1SG can swim

All of the participants selected option A, understanding that the addition of sentence-final *le* conveys a change of state from being able to swim now, from not being able to swim before. Q4.2 has the lowest accuracy rate of 74.78%, but it is still very high and indicates a strong understanding of the concept.

Q4.2: Which sentence more strongly implies your dress is shorter than it was before? 以下哪个句子更表示出你的裙子比以前短？

a. 你的裙子短了一点。
nǐ de qún zi duǎn **le** yī diǎn.
2SG POSS dress short LE a little

b. 你的裙子短一点了。
nǐ de qún zi duǎn yī diǎn **le**.
2SG POSS dress short a little LE

The majority of participants selected the correct option B, with the answer containing sentence-final *le*. Here, the sentence with sentence-final *le* more strongly implies that your dress is shorter than it was before, meaning that, at the time of the speaker's utterance, the dress is shorter than it was in the past, indicating that the state of the dress now is different than the state in the past. It shows that the dress is shorter than what is expected from the speaker, and also can imply surprise at the change (Woods, 2018).

5 Discussion

Separating the different usages of *le* by parts in the survey was crucial to understanding the various meanings. The expectation was that participants would also understand the different ways in which *le* is used in Mandarin is proved by the data, and builds off the previous research that also attempts to define and categorize *le*. The current data corroborates the two-morpheme approach, demonstrating that verbal *le* and sentence-final *le* are two homophonous morphemes that contain different readings depending on speaker attitude and context.

5.1 Part 1: Tense

Historically, Mandarin is defined as a tenseless language, as tense is not marked directly on the verbs. Instead, aspectual and lexical markers are added to sentences to indicate information about an event or action, which is argued to indirectly place events on the timeline (Smith, 1997). Part 1 focuses on the ways *le* can be used to express tense or temporal action, and the survey responses confirm that *le* can express temporality, given the context. Verbal *le* is argued to have narrow scope over the VP, which affects the meaning of the verb more, while sentential *le* has wide scope over the whole clause/sentence, which affects the meaning of the entire sentence more broadly. (Lundvik, 2024). We see this in Q1.1, where verbal *le* indicates past tense, since it is added directly after the verb, focusing on the action itself taking place before the Speech Time. C. S. Smith (1997) argues that the (indirect) ability of verbal *le* to express time is connected to its ability to convey that an event is bounded (Lundvik, 2024). So, the sentences that use verbal *le* convey events that are bounded. These events take place before the speech time, so it can indicate the event taking place in the past at the time of utterance.

Notably, in Q1.4, participants selected future tense for this event (losing weight), which was not expected. However, because the event in this question is atelic, with no endpoint, this may be why participants selected future tense, as perhaps since verbal *le* has a narrow scope over the verb, participants did not focus on when exactly the state happened, but on the verb itself,

where the losing weight event has not finished, but will finish at some point in the future. In contrast, in Q1.5, where the same verb is used with sentence-final *le*, participants chose the expected present perfect reading. This corroborates Lundvik's (2024) argument that sentence-final *le* has wide scope over the whole clause, as participants were able to understand that the state has started, but is also connected to the time of utterance, understanding the meaning and temporality of the sentence as a whole.

Additionally, Smith & Erbaugh (2005) argue that verbal *le* can give inchoative readings, indicating the beginning of a state, which can indicate the initial endpoint of a situation, and not the final endpoint. Q1.4 and Q1.5 show that *le* indexes an inchoative reading with the losing weight verb, focusing on the losing weight event's beginning, initial endpoint, and not the event being finished. C.S. Smith (1997) argues that present perfect tense has a focus on both final and initial endpoint of the state, while future tense has a focus on the initial endpoint of the state. Because both tenses share a focus on the initial endpoint of the state, this could be why participants preferred the future reading for Q1.4 as well. Overall, C.S. Smith (1997), Smith & Erbaugh (2005), and Lin (2003) all argue that while verbal *le* is not specifically a tense marker, it can convey temporal location of events by relying on its relation to context and aspectual meaning.

5.2 Part 2: Completion

Verbal *le* is often defined as a perfective marker, indicating completion or termination of an event or state (Ross and Ma, 2006). *Le* is an aspect marker that focuses on the verb, on whether the action has reached an endpoint, rather than focusing on whether the action has occurred. The data here successfully supports this interpretation, as most participants were able to grasp that sentences with verbal *le* indicated completion, while the sentences with sentence-final *le* might not indicate completion. When *le* is placed directly after the verb, the event that the verb is describing has been completed. Smith & Erbaugh (2005) also argue that verbal *le* indicates boundedness of an event, indicating completion. When *le* is placed at the end of the sentence, however, while it also can mean the event has been completed, it also might not indicate that it has been completed. The event could still be happening at the moment of utterance.

Q 2.3 我们吃了晚饭。

wǒ men chī **le** wǎn fàn.

1PL eat LE dinner

Has the eating event been completed? 吃晚饭完成了吗？

Q 2.4 我们吃晚饭了。

wǒ men chī wǎn fàn **le**.

1PL eat dinner LE

Has the eating event been completed? 吃晚饭完成了吗？

In Q2.4, the *le* can indicate that this event of eating has been completed, but it also could indicate that the eating event has started, but has not yet finished. Verbal *le* indicates the event has terminated, while sentence-final *le* indicates the event has started (Soh and Gao 2006). The *le* here does not ensure that this event has had an endpoint, and with added context, it could describe a situation where dinner has started and is still going on at the time of utterance. For example,

(14) 我们吃晚饭了。来，跟我们吃饭。

wǒ men chī wǎn fàn **le**. lái, gēn wǒ men chī fàn.

1PL eat dinner LE. come, with 1PL eat food

We are eating dinner. Come eat with us.

This example gives more insight into how this *le* can mean that an event has started, with no endpoint quite yet. This would not make sense if verbal *le* was used. Additionally, the sentence-final *le* can signal an "emergence of a new situation" (Ross and Ma, 2006). The new situation, implied by the added context, the hearer will join the speaker in eating dinner. The difference in meaning when verbal *le* is used vs when sentence-final *le* is used emphasize the idea that these are two different morphemes.

5.3 Part 3: Stance/Modality

Moving away from temporal definitions of *le*, *le* is also used as a modal, to convey emotion or emphasis towards the topic at hand. Additionally, Chang (2009) argues that sentence-final *le* is used to show epistemic or evaluative stance, which is then used to show assessment, agreement, or concession in discourse. Lundvik (2024) defines *le* as a modal with emphatic assertion as a major domain. Many examples in Part 3 indicate that sentences containing *le* display some

emotion towards the statement, while sentences without *le* do not. Additionally, none of the sentences in Part 3 contain any sentences with verbal *le,* since verbal *le* is only commonly considered as a perfective marker, and not considered to show stance. For the examples chosen, if verbal *le* was added instead of sentence-final *le*, it would be ungrammatical.

Q3.1 你的房间太乱了。

nǐ de fáng jiān tài luàn **le** .

a. This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。

b. This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度(不满)。

In Q3.1, *le* is used as a discourse marker, and shows evaluative stance as well as assessment towards the topic at hand. (Chang, 2009). Adding *le* at the end of the sentence shows how the speaker feels about the statement - it is not just a fact that the room is messy, but the speaker takes a stance, and feels it is too messy. The speaker directs this at the hearer, and emphasizes their assessment to the hearer in conversation.

Q3.9 菜有点儿咸了。

cài yóu diǎn er xián **le**.

dish is little salty LE

The dish is a little salty.

In Q3.9, the usage of *le* emphasizes the saltiness of the soup - it indicates that the saltiness exceeds the expectation of the speaker (Chang, 2009).

Klein et al (2000) and Lundvik (2024) argue that the modality function of *le* is a primary usage of *le*, rather than aspect. While *le* is used very often in this sense, the data does show that it isn't as clear to speakers as some of the other functions. However, this could be due to the sentences and examples I chose for the survey. Overall, the data from this part does show sentence-final *le* to convey emphasis as a modal, as well as social activities in discourse, such as stance, assertion, or concession, which emphasizes the argument that sentence-final *le* has such a separate use case than verbal *le*.

5.4 Part 4: Change of State

Sentence-final *le* is argued to convey change of state, an emergence of a new situation, or a change from what is expected (Chief, 2019). The addition of *le* at the end of the sentence indicates that there was a previous state that has happened at the time of the current state, and the current state has changed from what was true in the previous state. Sentence-final *le* is used to bring attention to the event as a whole, emphasizing the fact that there is a change from what is expected. Something has changed so the current state is different than before. Most participants were able to grasp this concept.

Q4.4 Which sentence more strongly implies that I got into college recently, but I didn't before? 以下哪个句子更表示出我现在上大学以前没有？

a. 我上了大学。
wǒ shàng **le** dà xúe.
1SG start LE college

b. 我上大学了。
wǒ shàng dà xúe **le**.
1SG start college LE

In Q4.4, most participants were able to understand that option B shows a change of state from before, that I got into college now, but was not able to before. Wang (2018) argues that *le* is a focus marker, as *le* emphasizes the assertion of the situation in the sentence, since it is contrasted with alternative situations. For example, in Q4.4, the state where I got into college now is asserted with the *le* in the sentence-final position because it is contrasted with the previous state in which I did not get into college. It also marks surprise, as the statement is contrasting from what is expected (Woods, 2018). In contrast, most participants did not select sentences with verbal *le* to show a change of state from a previous state. Additionally, sentence-final *le* is argued to "correct a wrong assumption" (Wang, 2018), (Li & Thompson, 1982). In the example below (14), this definition can be demonstrated, if context is provided. (15) is an answer option from Q4.3 that the majority of participants selected.

(14) 为什么你在跟他玩儿？你都不知道他的名字！
wèi shén me nǐ zài gén tā wán er? nǐ dōu bù zhī dào tā de míng zi !
why 2SG with him play? 2SG even do not know his POSS name!

Why are you hanging out with him? You don't even know his name!

(15) 我知道他的名字了!

wǒ zhī dào tā de míng zi **le**.

1SG know 3SG POSS name LE

I know his name now. (It's normal that we are hanging out, I know his name now).

The speaker in (15) corrects the speaker in (14) that assumes (15) doesn't know the name of the person they are hanging out with. Sentence-final *le* emphasizes the current state of knowing his name now in order to correct a wrong assumption. Here, sentence-final *le* demonstrates a change of state as well as conversation concession (Chang, 2009), connecting the two usages together in discourse. While this context was not provided in the survey, the selection of (15) indicates participants' understanding of the statement that emphasizes a difference in the current state from before, and corrects an assumption the name was unknown. Both of these use cases demonstrate a greater variety in meaning when sentence-final *le* is used in different contexts compared to verbal *le*.

While many researchers in the one morpheme camp argue that *le* is a multi-functional, polysemous morpheme with one underlying meaning, the distinction between verbal *le* and sentence-final *le* is too different to unify. However, this argument can apply to both verbal *le* and sentence-final *le* separately – verbal *le* can indirectly mark tense and directly mark completion of an event, while sentence-final *le* is used as a discourse marker, emphasizes speaker stance, and marks a change of state. The empirical methodology of this study sought to define the multiple definitions and functions of *le*, and the speaker judgments emphasize the distinction of *le* based on syntactic position, while also further specifically defining *le*. In part 1, participants recognized that *le* can express tense, and in part 2, the majority of participants' answers provided evidence of verbal *le* indicating completion of an event. Additionally, in part 3, participants understood that sentence-final *le* indexes stance and modality, with functions in discourse, and in part 4, understood that sentence-final *le* signals a change of state. These speaker responses are indicative that verbal *le* and sentence-final *le* are two distinct morphemes, but verbal *le* and sentence-final *le* separately are polysemous – within their syntactic positions, they share multiple meanings that are related.

6 Further Directions

While much of my research on *le* and translating that knowledge into creating survey questions was conducted before the survey was created, much more of my knowledge was also improved after the survey was completed. While my survey design gets at certain questions like whether verbal *le* and sentence-final *le* are two distinct morphemes, and starts the discussion on the polysemous nature of both *le*'s within their syntactic position, an additional survey might be used to further understand and define more use cases of *le*. Example sentences in the current survey are very simple, with some repeated verbs, so in the future, a larger variety of verbs and sentences would help probe speakers' interpretations and result in a larger pool of semantic judgments. Additionally, I would add more example questions for parts three and four. *Le* as a discourse marker is very commonly used among Mandarin speakers, and the different contexts it is used in can also index many different meanings. I would create more discourse examples with *le*, using it in different ways to index stance, as well as other social activities in discourse. For part four, I would just add more sentence prompts, as well as a larger variety, using different verbs and meanings, as there are only four in the current survey. Additionally, my survey did not separate the sentence examples by the different verb aspectual classes, such as achievements, activities, states, and accomplishments. In the future, I would separate the different examples and have one example for each verb class, so that the differences in the meanings of *le* also takes the verb class into effect. Overall, most, if not all of the studies I researched were based on the author's own judgements of grammaticality and interpretation, so my study brings new research and data to the field by surveying a large number of speakers.

In the future, I would also like to investigate how Large Language Models interpret the meaning of *le* compared to human experts. I would research this by randomizing the present survey and inputting it into a specific LLM, like ChatGPT-4o, and compare the results from this study to the results of the LLM's judgments.

7 Conclusion

The Mandarin grammatical marker *le* has been analyzed extensively for many years, as it has been difficult to define. Because it has been used in so many different contexts with different functions, many have had trouble understanding the specific meaning of *le*, and whether *le* contains multiple meanings depending on syntactic position, as a homophonous morpheme marker, or as a singular morpheme containing one, unified meaning. The present study sought to

define multiple meanings of *le*, coinciding with many authors' two-morpheme view. Through a questionnaire survey of Mandarin speakers, multiple meanings and functions of *le* were able to be defined and analyzed. Specifically, the meaning and usage of *le* differs based on syntactic position, as verbal *le* (directly after the verb), or sentence-final *le* (at the very end of a sentence). Verbal *le* can convey tense, completion of an event, while sentence-final *le* can convey a change of state, modality and emphasis/assertion in discourse, and both can convey tense, even though Mandarin is a tenseless language. Because the difference in meaning is so apparent in the data, this is evidence for the two-morpheme approach of defining *le* - there are too many categories of meaning to attempt to unify and combine all the different meanings into one. Most of the past research on this topic is based on qualitative measures, such as individual judgments and interpretations in order to define *le*, while the present study provides quantitative survey results on native speakers' instincts and preferences that will further the current discussion on the topic, helping drive the debate forward. The empirical evidence found from speakers is crucial to understanding the semantic meaning of this marker, especially since Mandarin is such a context-based language. Surveying Mandarin speakers on their judgements of *le* has provided important semantic information on the grammatical particle *le*, as well as tense, aspect, and discourse knowledge in Mandarin linguistics. The results provide further evidence for verbal *le* and sentence-final *le* as two distinct morphemes, as well as contribute more specific descriptions of the usage, function, and definitions of *le* that will add to this field.

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Appendix A: Survey

Semantics of Mandarin marker LE

Start of Block: Default Question Block

Data collected from this confidential survey will be used for completion of a master's degree in Linguistics at San Francisco State University. The information gathered will be used for research on the Mandarin marker LE. 此问卷收集的信息数据是匿名且保密的，主要用于研究有关中文里的助词"了"；以完成加州州立大 学三藩分校的语言学硕士论文。

The survey questions will be about the meaning of LE in Mandarin Chinese. You have been invited to participate because you are an adult speaker of Mandarin Chinese. 此问卷中的问题将着眼于中文里"了"的意思。由于您懂中文且已成, 年在此诚邀参与。

You must be 18 years of age or older to participate. There are no risks or benefits to you in participating in this survey. You may choose to participate or not. You may answer only the questions you feel comfortable answering, and you may stop at any time. If you do not wish to participate, you may simply return the blank survey, with no penalty to yourself. If you do participate, completion and return of the survey indicates your consent to the above conditions. Your decision whether or not to participate in this research will have no influence on your present or future status at San Francisco State University. 参与答卷您须年满 18 岁。您不会因此有任何风险或收益。您可自愿选择参与或拒绝。您可以只回答愿意回答的部分，也可以随时停止。如果您不想参加, 只需要把空白问卷送回即可，对您不造成任何影响。如果您愿意回答，则意味满足上述条件。 是否参与此问卷不会对您现在或将来与加州州立大学三藩分校的关系产生任何影响。

Please do not put your name on this form. The survey should take approximately 20 minutes to complete. Any questions or concerns should be directed to the principal investigator, Jasmine Zeng, at jzeng@sfsu.edu or the research advisor Jenny Lederer, lederer@sfsu.edu. 请不要署名，完成问卷大约占用您 20 分钟的宝贵时间。 如果对此问卷有任何问题或疑虑请直接联系主要研究者，Jasmine Zeng（曾司敏），电邮 jzeng@sfsu.edu ，或者她的导师 Jenny Lederer, lederer@sfsu.edu.

I am a Mandarin Chinese speaker, 18 years of age or older, and I agree to participate in this survey. 我讲中文且年满 18 岁，我同意参与此问卷。

- ○ Yes 是
- ○ No 否

End of Block: Default Question Block

Start of Block: Part 1 Instructions

In Part 1 of the survey, you will be shown 1 sentence in Mandarin and a question with multiple answers about the content of the sentences. Please choose the answer you think is correct. If multiple options seem right, please pick the one you think is the most fitting. 问卷的第一部分，每个中文句子后会有一个多选题问这个句子的内容，请选择一个正确答案。如果有多于一个答案都正确，请选择您认为最为贴切的那个。

End of Block: Part 1 Instructions

Start of Block: Part 1

Q1 我买了水果。 wǒ mǎi le shuǐ guǒ. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。

- ○ Buying event taking place in the past. 买这个行为是过去发生的。
- ○ Buying event started in the past and continuing up to the present. 买这个行为是过去开始的并持续至现在。
- ○ Buying event taking place in the present. 买这个行为是现在发生的。
- ○ Buying event taking place in the future. 买这个行为将要发生。

Q9 我买水果了。 wǒ mǎi shuǐ guǒ le. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。

- ○ Buying event taking place in the past. 买这个行为是过去发生的。
- ○ Buying event started in the past and continuing up to the present. 买这个行为是过去开始的并持续至现在。
- ○ Buying event taking place in the present. 买这个行为是现在发生的。
- ○ Buying event taking place in the future. 买这个行为将要发生。

Q10 我买三种水果了。 wǒ mǎi sān zhǒng shuǐ guǒ le . At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何时发生的？请选择最接近的选项。

- ○ Buying event taking place in the past. 买这个行为是过去发生的。
- ○ Buying event started in the past and continuing up to the present. 买这个行为是过去开始的并持续至现在。
- ○ Buying event taking place in the present. 买这个行为是现在发生的。
- ○ Buying event taking place in the future. 买这个行为将要发生。

Q13 你瘦了一点。 nǐ shòu le yī diǎn. At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中减重这个事情是何时发生的？请选择最接近的选项。

- Losing weight event taking place in the past. 减肥这个行为是过去发生的。
- Losing weight event started in the past and continuing up to the present. 减肥这个行为是过去开始的并持续至现在。
- Losing weight event taking place in the present. 减肥这个行为是现在发生的。
- Losing weight event taking place in the future. 减肥这个行为将要发生。

Q14 你瘦一点了。 nǐ shòu yī diǎn le. At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中减肥这个事情是何时发生的？请选择最接近的选项。

- Losing weight event taking place in the past. 减肥这个行为是过去发生的。
- Losing weight event started in the past and continuing up to the present. 减肥这个行为是过去开始的并持续至现在。
- Losing weight event taking place in the present. 减肥这个行为是现在发生的。
- Losing weight event taking place in the future. 减肥这个行为将要发生。

End of Block: Part 1

Start of Block: Part 2 Instructions

Q49 For part 2, you will be shown 1 sentence in Mandarin and a question with two answers about the content of the sentences. Please choose the answer you think is correct. If both options seem right, please pick the one you think is the most fitting. 问卷的第二部分，每个中文句子后会有两个相关的答案，请选择一个正确答案。如果两个答案都正确，请选择您认为最为贴切的那个。

End of Block: Part 2 Instructions

Start of Block: Part 2

Q17 你睡觉了么？ nǐ shùi jiào le me? Has the sleeping event been completed? 睡觉这个状态完成了吗？

- Yes, the sleeping event has been completed. 是的，睡觉已经完成了.
- It might not indicate that the sleeping event has been completed. 睡觉不一定完成了.

Q18 你睡了觉么？ nǐ shùi le jiào me? Has the sleeping event been completed? 睡觉这个状态完成了吗？

- Yes, the sleeping event has been completed. 是的，睡觉已经完成了.
- It might not indicate that the sleeping event has been completed. 睡觉不一定完成了.

Q19 我们吃了晚饭。 wǒ men chī le wǎn fàn. Has the eating event been completed? 吃晚饭完成了吗？

- Yes, the eating event has been completed. 是的，晚饭已经吃完。
- It might not indicate that the eating event has been completed. 晚饭不一定吃完了。

Q20 我们吃晚饭了。 wǒ men chī wǎn fàn le. Has the eating event been completed? 吃晚饭完成了吗？

- Yes, the eating event has been completed. 是的，晚饭已经吃完。
- It might not indicate that the eating event has been completed. 晚饭不一定吃完了。

Q21 他去了公园。 tā qù le gōng yuán. Has the arriving event been completed? 去到公园这个行动完成了吗？

- Yes, the arriving event has been completed. 是的，已经到达了。
- It might not indicate that the arriving event has been completed. 不一定到达公园了。

Q22 他去公园了。 tā qù gōng yuán le. Has the arriving event been completed? 去到公园这个行动完成了吗？

- Yes, the arriving event has been completed. 是的，已经到达了。
- It might not indicate that the arriving event has been completed. 不一定到达公园了。

Q23 我读了那本书。 wǒ dú le na běn shū. Has reading the whole book been completed? 全书阅读完成了吗？

- Yes, reading the whole book has been completed. 是的，全书已读完。
- It might not indicate that the whole book has been completed. 全书不一定读完了。

Q24 我读那本书了。 wǒ dú na běn shū le. Has reading the whole book been completed? 全书阅读完成了吗？

- Yes, reading the whole book has been completed. 是的，全书已读完。
- It might not indicate that the whole book has been completed. 全书不一定读完了。

Q26 他来了你家么？ tā lái le nǐ jiā me?

- This question is asking if he has come to your home and hasn't completed the visit. 这个问题是问他到了你家但还没有完成探访。
- This question is asking if he has been to your home and has completed the visit. 这个问题是问他有没有到过你家（已完成探访）。

Q27 他来你家了么？ tā lái nǐ jiā le me?

- This question is asking if he has come to your home and hasn't completed the visit. 这个问题是问他到了你家但还没有完成探访。
- This question is asking if he has been to your home and has completed the visit. 这个问题是问他有没有到过你家（已完成探访）。

End of Block: Part 2

Start of Block: Part 3

In part 3, you will be shown 1 sentence in Mandarin and two answer options about the content of the sentences. Please choose the answer you think is correct. If both options seem right, please pick the one you think is the most fitting. 问卷的第三部分，每个中文句子后会有两个相关的答案，请选择一个正确答案。如果两个答案都正确，请选择您认为最为贴切的那个。

End of Block: Part 3

Start of Block: Part 3

Q28 你的房间太乱了。 nǐ de fáng jiān tài luàn le .

○ This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。

○ This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度（不满)。

Q29 你的房间太乱。 nǐ de fáng jiān tài luàn.

○ This sentence describes the fact that your room is messy. 这句话描述了你房间乱这个事实。

○ This sentence indicates some emotion towards the fact that your room is messy. 这句话还表示出对房间乱这事的态度（不满)。

Q30 你昨天去看电影了。 nǐ zúo tiān qù kàn diàn yǐng le.

○ This sentence describes the fact that you went to the movies yesterday. 这句话叙述了你昨天去看电影这个事。

○ This sentence indicates some emotion towards the fact that you went to the movies yesterday. 这句话还表示出对你昨天去看电影这事的态度。

Q31 你昨天去看电影。 nǐ zúo tiān qù kàn diàn yǐng.

○ This sentence describes the fact that you went to the movies yesterday. 这句话叙述了你昨天去看电影这个事。

○ This sentence indicates some emotion towards the fact that you went to the movies yesterday. 这句话还表示出对你昨天去看电影这事的态度。

Q32 他在上班。 tā zài shàng bān.

- This sentence describes the fact that he is at work. 这句话叙述了他在上班这个事。
- This sentence indicates some emotion towards the fact that he is working. 这句话还表示出对他在上班这个事的态度。

Q33 他在上班了。 tā zài shàng bān le.

- This sentence describes the fact that he is at work. 这句话叙述了他在上班这个事。
- This sentence indicates some emotion towards the fact that he is working. 这句话还表示出对他在上班这个事的态度。

Q34 今天感觉很好了。 jīn tiān gǎn júe hén hǎo le.

- This sentence describes the fact that I feel good today. 这句话描述了我感觉很好这个事实。
- This sentence indicates some emotion towards the fact that I feel good today. 这句话还表示出对我感觉很好这事的态度。

Q35 今天感觉很好。 jīn tiān gǎn jué hén hǎo.

- This sentence describes the fact that I feel good today. 这句话描述了我感觉很好这个事实。
- This sentence indicates some emotion towards the fact that I feel good today. 这句话还表示出对我感觉很好这事的态度。

Q36 菜有点儿咸了。 cài yóu diǎn er xián le.

- This sentence describes the fact the dish is salty. 这句话讲述了这个菜太咸这个事实。
- This sentence indicates some emotion towards the fact the dish is salty. 这句话还表示出对菜稍咸这事的态度。

Q37 菜有点儿咸。 cài yóu diǎn er xián.

- This sentence describes the fact the dish is salty. 这句话讲述了这个菜太咸这个事实。
- This sentence indicates some emotion towards the fact the dish is salty. 这句话还表示出对菜稍咸这事的态度。

End of Block: Part 3

Start of Block: Part 4 Instructions

In part 4, you will be asked a question, with two different sentences in Mandarin as answer options. Please choose the answer you think is correct. If both options seem right, please pick the one you think is the most fitting. 问卷的第四部分，会先有一个问题，然后有两个中文回答的选项，请选择一个正确答案。如果两个答案都正确，请选择您认为最为贴切的那个。

End of Block: Part 4 Instructions

Start of Block: Part 4

Q39 Which sentence more strongly implies that I know how to swim now, but I didn't before? 以下哪个句子更表示出我现在我会游泳但以前不会？

- 我会游泳了。 wǒ hùi yóu yǒng le.
- 我会游泳。 wǒ hùi yóu yǒng.

Q40 Which sentence more strongly implies your dress is shorter than it was before? 以下哪个句子更表示出你的裙子比以前短？

- 你的裙子短了一点。 nǐ de qún zi duǎn le yī diǎn.
- 你的裙子短一点了。 nǐ de qún zi duǎn yī diǎn le.

Q41 Which sentence more strongly implies that I know his name now, but I didn't know it before? 以下哪个句子更表示出我现在知道了他的名字，但以前不知道？

- 我知道了他的名字。 wǒ zhī dào le tā de míng zi.
- 我知道他的名字了。 wǒ zhī dào tā de míng zi le.

Q42 Which sentence more strongly implies that I got into college recently, but I didn't before? 以下哪个句子更表示出我现在上大学以前没有？

- 我上了大学。 wǒ shàng le dà xúe.
- 我上大学了。 wǒ shàng dà xúe le.

End of Block: Part 4

Start of Block: Demographic Questions

Q46 What state do you live in? 您住在那个州？

_____

_____

_____

_____

_____

Q47 What is your age? 您的年龄？

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

Q48 Please describe your Mandarin level： 请描述您的中文水平：

- ○ 母语 (Native Speaker)
- ○ 流利 (Fluent)
- ○ 中级水平 (Intermediate)
- ○ 初学者 (Beginner)

End of Block: Demographic Questions

This document was exported from Numbers. Each table was converted to an Excel worksheet. All other objects on each Numbers sheet were placed on separate worksheets. Please be aware that formula calculations may differ in Excel.

Numbers Sheet Name	Numbers Table Name	Excel Worksheet Name
Sheet 1		
	Semantics of Mandarin marker LI	Sheet 1 - Semantics of Mandarin
	Table 1	Sheet 1 - Table 1
	“All Drawings from the Sheet”	Sheet 1 - Drawings

Semantics of Mandarin marker LE_March 3, 2025_11.53

StartDate	EndDate	IPAddress	Progress	Duration (in seconds)	Finished	RecordedDate	DistributionChannel	UserLanguage		Q1	Q9	Q10	Q13	Q14	Q17	Q18	Q19	Q20
Start Date	End Date	IP Address	Progress	Duration (in seconds)	Finished	Recorded Date	Distribution Channel	User Language	I am a Mandarin Chinese speaker, 18 years of age or older, and I agree to participate in this survey. 我讲中文且年满18岁，我同意参与此问卷。	我买了水果。 wǒ mǎi le shuǐ guǒ. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何	我买水果了。 wǒ mǎi shuǐ guǒ le. At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何	我买三种水果了。 wǒ mǎi sān zhǒng shuǐ guǒ le . At what time do you think the buying event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中买这个行为是何	你瘦了一点。 nǐ shòu le yī diǎn. At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option. 你觉得以下这个叙述中减重这个重	你瘦一点了。 nǐ shòu yī diǎn le. At what time do you think the losing weight event in the following sentences occurred? Please choose the most suitable option.	你睡觉了么? nǐ shùi jiào le me? Has the sleeping event been completed? 睡觉这个状态完成了吗?	你睡了觉么? nǐ shùi le jiào me? Has the sleeping event been completed? 睡觉这个状态完成了吗?	我们吃了晚饭。 wǒ men chī le wǎn fàn. Has the eating event been completed? 吃晚饭完成了吗?	我们吃晚饭了。 wǒ men chī wǎn fàn le. Has the eating event been completed? 吃晚饭完成了吗?
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2025-02-12 13:37:36	2025-02-12 13:44:32	164.111.13.216	100	415	1	2025-02-12 13:44:33	anonymous	EN	1	1	1	1	0	1	0	1	1	1
2025-02-12 15:49:52	2025-02-12 16:02:34	45.30.110.137	100	762	1	2025-02-12 16:02:35	anonymous	EN	1	1	1	1	1	1	1	0	1	0
2025-02-13 05:54:03	2025-02-13 06:10:34	39.144.50.0	100	991	1	2025-02-13 06:10:35	anonymous	EN	1	1	1	1	1	0	1	0	1	1
2025-02-13 12:21:36	2025-02-13 12:42:51	47.148.111.168	100	1275	1	2025-02-13 12:42:52	anonymous	EN	1	1	1	1	0	1	1	1	1	1
2025-02-13 17:03:15	2025-02-13 17:13:20	73.92.246.41	100	604	1	2025-02-13 17:13:21	anonymous	EN	1	1	1	1	0	1	1	1	1	1
2025-02-13 14:20:56	2025-02-13 17:59:05	23.243.37.179	100	13088	1	2025-02-13 17:59:06	anonymous	EN	1	1	0	1	1	0	1	0	1	0
2025-02-14 11:37:18	2025-02-14 11:44:43	76.169.23.30	100	445	1	2025-02-14 11:44:43	anonymous	EN	1	1	1	0	0	0	0	1	1	1
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2025-02-15 04:14:05	2025-02-15 04:24:42	67.14.242.223	100	637	1	2025-02-15 04:24:43	anonymous	EN	1	0	1	1	0	0	1	0	1	0
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2025-02-14 09:46:48	2025-02-14 09:56:05	174.227.84.152	100	556	1	2025-02-14 09:56:06	anonymous	EN	1	1	1	1	0	1	1	0	1	0
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2025-02-12 21:42:17	2025-02-12 21:55:47	172.58.210.220	100	809	1	2025-02-12 21:55:47	anonymous	EN	1	1	1	1	0	1	1	1	1	0
2025-02-13 14:49:28	2025-02-13 14:55:04	174.218.82.113	100	336	1	2025-02-13 14:55:04	anonymous	EN	1	1	1	1	1	1	1	1	1	1
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2025-02-10 12:14:35	2025-02-10 12:19:06	47.145.105.39	100	270	1	2025-02-10 12:19:06	anonymous	EN	1	1	1	1	0	1	0	0	1	0
2025-02-14 13:17:26	2025-02-14 13:24:45	4.242.11.68	100	438	1	2025-02-14 13:24:45	anonymous	EN	1	1	1	1	0	0	1	0	1	0
2025-02-17 09:43:43	2025-02-17 10:57:31	135.180.249.0	100	4428	1	2025-02-17 10:57:32	anonymous	EN	1	1	1	1	1	1	1	0	1	0
2025-02-12 13:14:47	2025-02-12 13:21:29	73.93.72.251	100	402	1	2025-02-12 13:21:29	anonymous	EN	1	1	1	1	1	1	1	0	1	1
2025-02-12 16:23:09	2025-02-12 16:29:33	104.60.243.254	100	384	1	2025-02-12 16:29:33	anonymous	EN	1	1	1	1	1	1	1	1	1	0
2025-02-12 16:52:12	2025-02-12 16:56:07	104.60.243.254	100	234	1	2025-02-12 16:56:07	anonymous	EN	1	1	1	1	0	1	1	0	0	0
2025-02-14 13:31:54	2025-02-14 13:41:21	47.149.134.245	100	567	1	2025-02-14 13:41:22	anonymous	EN	1	1	1	0	0	1	0	1	1	1
2025-02-12 12:47:05	2025-02-12 13:04:47	104.33.65.183	100	1062	1	2025-02-12 13:04:48	anonymous	EN	1	1	1	0	0	1	1	0	1	0
2025-02-13 15:06:30	2025-02-13 15:36:06	47.145.103.85	100	1776	1	2025-02-13 15:36:06	anonymous	EN	1	1	1	0	0	1	1	0	1	0
2025-02-14 15:12:15	2025-02-14 15:28:43	209.133.55.120	100	987	1	2025-02-14 15:28:44	anonymous	EN	1	1	1	0	0	1	1	0	1	1
2025-02-12 20:16:49	2025-02-12 20:43:31	69.181.0.18	100	1602	1	2025-02-12 20:43:32	anonymous	EN	1	1	1	1	1	1	1	1	1	1
2025-02-13 10:45:41	2025-02-13 11:00:38	35.149.36.21	100	897	1	2025-02-13 11:00:39	anonymous	EN	1	1	1	0	0	1	1	0	1	1
2025-02-13 17:09:18	2025-02-13 17:14:48	45.50.65.134	100	329	1	2025-02-13 17:14:49	anonymous	EN	1	1	1	1	0	0	0	0	1	1
2025-02-13 03:30:11	2025-02-13 03:36:30	138.118.213.243	100	379	1	2025-02-13 03:36:31	anonymous	EN	1	1	0	1	1	1	1	1	1	0
2025-02-13 17:39:40	2025-02-13 18:33:13	47.145.116.69	100	3213	1	2025-02-13 18:33:14	anonymous	EN	1	1	1	1	1	1	1	1	0	0
2025-02-13 15:42:35	2025-02-13 16:01:05	47.145.103.85	100	1110	1	2025-02-13 16:01:06	anonymous	EN	1	1	1	1	1	0	1	0	1	0
2025-02-14 00:21:10	2025-02-14 00:33:24	68.21.135.168	100	734	1	2025-02-14 00:33:25	anonymous	EN	1	0	1	1	1	1	1	0	1	0
2025-02-13 14:19:31	2025-02-13 14:24:40	91.196.220.99	100	309	1	2025-02-13 14:24:41	anonymous	EN	1	1	1	1	1	1	1	1	1	0
2025-02-12 12:40:39	2025-02-12 12:50:56	47.176.255.194	100	616	1	2025-02-12 12:50:56	anonymous	EN	1	1	1	0	0	1	1	1	1	1
2025-02-12 12:49:32	2025-02-12 12:53:52	134.139.34.70	100	259	1	2025-02-12 12:53:52	anonymous	EN	1	1	0	1	0	1	1	1	1	1
2025-02-13 22:56:22	2025-02-13 23:02:29	172.58.209.180	100	367	1	2025-02-13 23:02:30	anonymous	EN	1	1	1	1	0	1	1	0	1	1
2025-02-13 17:46:03	2025-02-13 22:29:04	172.56.176.109	100	16980	1	2025-02-13 22:29:04	anonymous	EN	1	0	1	1	0	1	0	0	1	0
2025-02-12 13:51:45	2025-02-12 13:59:11	172.56.240.180	100	445	1	2025-02-12 13:59:11	anonymous	EN	1	1	1	0	1	0	1	1	1	1
2025-02-12 16:32:53	2025-02-12 16:51:23	125.37.184.112	100	1110	1	2025-02-12 16:51:23	anonymous	EN	1	1	1	1	1	0	1	0	1	1
2025-02-13 15:28:06	2025-02-13 15:45:52	172.59.68.182	100	1065	1	2025-02-13 15:45:52	anonymous	EN	1	1	0	1	0	1	1	0	1	1
2025-02-13 15:34:30	2025-02-13 15:43:52	174.225.72.159	100	561	1	2025-02-13 15:43:52	anonymous	EN	1	1	1	0	0	1	0	1	1	1
2025-02-12 12:39:15	2025-02-12 12:43:36	174.200.155.212	100	260	1	2025-02-12 12:43:36	anonymous	EN	1	1	0	1	1	1	1	0	0	1
2025-02-12 15:04:59	2025-02-12 15:20:30	76.34.53.130	100	931	1	2025-02-12 15:20:31	anonymous	EN	1	1	0	0	0	1	0	1	1	1
2025-02-13 14:41:48	2025-02-13 14:48:22	174.219.3.150	100	393	1	2025-02-13 14:48:22	anonymous	EN	1	1	1	1	0	0	1	1	1	1

2025-02-13 18:09:44	2025-02-13 18:16:10	71.125.79.46	100	386	1	2025-02-13 18:16:11	anonymous	EN	1	1	1	0	1	0	0	0	1	0
2025-02-13 14:54:17	2025-02-13 15:16:39	71.125.79.46	100	1341	1	2025-02-13 15:16:39	anonymous	EN	1	1	1	0	0	1	1	0	1	0
2025-02-14 15:22:33	2025-02-14 15:32:57	70.21.152.21	100	623	1	2025-02-14 15:32:57	anonymous	EN	1	1	1	1	1	0	0	1	1	1
2025-02-12 14:12:52	2025-02-14 04:42:07	73.226.103.86	100	138555	1	2025-02-14 04:42:08	anonymous	EN	1	1	1	1	1	1	1	0	1	1
2025-02-13 16:04:53	2025-02-13 16:10:31	166.194.188.135	100	337	1	2025-02-13 16:10:31	anonymous	EN	1	1	1	1	1	0	1	0	0	1
2025-02-13 16:30:16	2025-02-13 16:37:31	70.21.152.21	100	435	1	2025-02-13 16:37:32	anonymous	EN	1	1	1	0	0	0	0	0	1	0
2025-02-13 05:48:15	2025-02-13 05:54:27	100.1.99.189	100	371	1	2025-02-13 05:54:27	anonymous	EN	1	1	1	1	0	0	1	0	1	1
2025-02-12 14:05:49	2025-02-12 14:12:54	96.227.143.215	100	425	1	2025-02-12 14:12:55	anonymous	EN	1	1	1	0	1	1	1	0	1	1
2025-02-13 15:00:18	2025-02-13 15:05:51	71.58.111.135	100	333	1	2025-02-13 15:05:51	anonymous	EN	1	1	1	1	0	1	0	1	1	0
2025-02-13 12:26:59	2025-02-13 12:43:55	104.7.217.85	100	1015	1	2025-02-13 12:43:56	anonymous	EN	1	1	0	0	1	0	1	0	1	1
2025-02-12 13:00:16	2025-02-12 13:11:49	108.79.233.85	100	692	1	2025-02-12 13:11:49	anonymous	EN	1	1	1	1	1	0	1	1	1	1
2025-02-13 18:36:06	2025-02-13 19:37:12	108.18.37.113	100	3666	1	2025-02-13 19:37:12	anonymous	EN	1	1	1	1	1	1	0	1	1	0
2025-02-13 13:44:07	2025-02-13 14:16:48	67.183.88.108	100	1960	1	2025-02-13 14:16:48	anonymous	EN	1	1	0	0	0	1	1	0	1	0
2025-02-13 21:19:27	2025-02-13 21:41:51	67.161.101.178	100	1343	1	2025-02-13 21:41:51	anonymous	EN	1	1	1	1	1	1	1	0	1	0
2025-02-13 13:27:18	2025-02-13 13:40:15	67.183.88.108	100	777	1	2025-02-13 13:40:16	anonymous	EN	1	1	1	0	1	0	1	1	1	0
2025-02-12 20:48:22	2025-02-12 22:24:59	76.146.182.88	100	5797	1	2025-02-12 22:25:00	anonymous	EN	1	1	1	0	0	0	1	0	1	0
2025-02-13 21:42:23	2025-02-13 21:47:15	67.161.101.178	100	291	1	2025-02-13 21:47:15	anonymous	EN	1	1	1	1	1	0	1	0	0	0
2025-02-13 20:34:57	2025-02-13 21:28:05	67.161.102.221	100	3187	1	2025-02-13 21:28:06	anonymous	EN	1	1	1	1	1	1	0	1	1	0
2025-02-12 16:57:05	2025-02-12 17:03:12	154.20.239.207	100	366	1	2025-02-12 17:03:12	anonymous	EN	1	1	1	1	1	0	0	1	1	0
2025-02-12 16:35:57	2025-02-12 16:47:55	70.93.179.37	100	718	1	2025-02-12 16:47:55	anonymous	EN	1	1	1	1	1	1	1	0	1	0
2025-02-12 18:39:36	2025-02-12 18:52:41	223.86.206.116	100	784	1	2025-02-12 18:52:42	anonymous	EN	1	1	0	0	0	0	1	0	1	1
2025-02-13 16:14:14	2025-02-13 16:23:24	74.126.231.138	100	549	1	2025-02-13 16:23:24	anonymous	EN	1	1	1	1	0	1	0	1	1	0
2025-02-13 17:12:06	2025-02-13 17:17:47	12.75.203.30	100	340	1	2025-02-13 17:17:47	anonymous	EN	1	1	1	0	0	1	1	1	1	1
2025-02-12 12:33:45	2025-02-12 12:37:34	174.218.85.56	100	229	1	2025-02-12 12:37:35	anonymous	EN	1	1	1	1	1	1	1	0	1	1
2025-02-08 08:44:32	2025-02-08 09:55:19	47.145.105.39	100	4246	1	2025-02-08 09:55:19	anonymous	EN	1	1	1	1	1	1	1	1	1	1
2025-02-13 15:36:41	2025-02-13 15:47:26	76.80.52.18	100	644	1	2025-02-13 15:47:26	anonymous	EN	1	0	1	1	1	0	0	1	1	1
2025-02-13 11:45:56	2025-02-13 12:03:42	216.165.227.149	100	1066	1	2025-02-13 12:03:43	anonymous	EN	1	1	1	1	0	0	1	0	1	0
2025-02-13 10:28:56	2025-02-13 10:37:31	47.229.102.80	100	515	1	2025-02-13 10:37:32	anonymous	EN	1	1	1	1	1	0	0	0	1	1
2025-02-13 02:11:54	2025-02-13 02:20:28	157.131.105.98	100	514	1	2025-02-13 02:20:28	anonymous	EN	1	1	1	0	0	1	1	1	1	0
2025-02-13 16:03:59	2025-02-13 16:12:18	114.36.211.86	100	498	1	2025-02-13 16:12:18	anonymous	EN	1	1	0	1	0	1	1	0	1	0
2025-02-13 10:11:35	2025-02-13 10:21:27	47.229.102.80	100	592	1	2025-02-13 10:21:28	anonymous	EN	1	1	1	1	0	1	1	0	1	0
2025-02-13 15:31:57	2025-02-13 15:40:03	76.171.243.20	100	486	1	2025-02-13 15:40:04	anonymous	EN	1	1	1	1	1	0	1	0	1	0
2025-02-13 16:30:20	2025-02-13 16:45:04	172.58.211.39	100	883	1	2025-02-13 16:45:05	anonymous	EN	1	1	1	1	0	1	1	1	1	1
2025-02-13 14:04:31	2025-02-13 14:15:05	174.193.192.230	100	634	1	2025-02-13 14:15:05	anonymous	EN	1	1	1	0	0	1	1	1	1	1
2025-02-12 17:26:45	2025-02-12 17:34:24	114.92.50.131	100	458	1	2025-02-12 17:34:24	anonymous	EN	1	1	1	1	0	0	1	0	1	0
2025-02-12 12:28:49	2025-02-12 12:44:16	68.111.92.172	100	927	1	2025-02-12 12:44:17	anonymous	EN	1	1	1	1	1	1	1	0	1	0
2025-02-12 15:00:40	2025-02-12 15:04:40	47.145.108.82	100	239	1	2025-02-12 15:04:40	anonymous	EN	1	1	1	0	0	1	0	1	0	1
2025-02-13 14:20:13	2025-02-13 19:01:22	209.107.180.152	100	16868	1	2025-02-13 19:01:22	anonymous	EN	1	0	1	1	0	0	1	0	1	1
2025-02-12 17:08:30	2025-02-12 19:35:02	67.150.86.101	100	8791	1	2025-02-12 19:35:02	anonymous	EN	1	1	0	1	1	0	1	0	1	0
2025-02-12 13:40:15	2025-02-12 13:49:39	172.58.116.246	100	564	1	2025-02-12 13:49:40	anonymous	EN	1	1	0	0	0	1	1	0	1	0
2025-02-14 19:59:39	2025-02-14 20:37:14	223.104.41.241	100	2254	1	2025-02-14 20:37:15	anonymous	EN	1	1	1	0	1	0	0	1	1	1
2025-02-14 19:49:06	2025-02-14 19:55:06	75.83.22.102	100	359	1	2025-02-14 19:55:07	anonymous	EN	1	1	1	1	0	1	1	0	1	1
2025-02-13 15:16:09	2025-02-13 15:37:00	99.131.51.81	100	1250	1	2025-02-13 15:37:01	anonymous	EN	1	1	1	1	0	0	0	1	1	0
2025-02-13 21:17:22	2025-02-13 21:40:39	67.161.97.206	100	1397	1	2025-02-13 21:40:39	anonymous	EN	1	1	1	1	1	1	0	1	1	0
2025-02-13 16:12:47	2025-02-13 16:23:37	49.216.41.122	100	649	1	2025-02-13 16:23:38	anonymous	EN	1	1	1	1	0	1	1	0	1	1
2025-02-12 13:17:20	2025-02-13 14:29:13	101.229.0.236	100	90713	1	2025-02-13 14:29:14	anonymous	EN	1	1	0	0	0	0	0	0	1	1
Correct											105	100	81	53	74	87	53	108	62
Incorrect											10	15	34	62	41	28	62	7	53
% correct											91.304347826087	86.956521739130	70.434782608695	46.086956521739	64.347826086956	75.652173913043	46.086956521739	93.913043478260	53.913043478260
Part %														Part 1	71.826086956521	28.173913043478			
																28.17391394			
Table 1																			
	Part 1	Part 2	Part 3	Part 4															
Expected Response	71.8260869565217	64.7826086956522	65.3913043478261	86.0869565217391															
Unexpected Response	28.1739130434783	35.2173913043478	34.6086956521739	13.9130434782609															
	Part 1: Tense	Part 2: Completion	Part 3: Stance/Modality	Part 4: Change of State															
Expected Response	71.8260869565217	64.7826086956522	65.3913043478261	86.0869565217391															
Unexpected Response	28.1739130434783	35.2173913043478	34.6086956521739	13.9130434782609															

Q21	Q22	Q23	Q24	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q39	Q40	Q41	Q42	Q46	Q47	Q48	
他去了公园。 tā qù le gōng yuán. Has the arriving event been completed? 去到公园这个行动完成了吗?	他去公园了。 tā qù gōng yuán le. Has the arriving event been completed? 去到公园这个行动完成了吗?	我读了那本书。 wǒ dú le na běn shū. Has reading the whole book been completed? 全书阅读完成了吗?	我读那本书了。 wǒ dú na běn shū le. Has reading the whole book been completed? 全书阅读完成了吗?	他来了你家么? tā lái le nǐ jiā me?	他来你家了么? tā lái nǐ jiā le me?	你的房间太乱了。 nǐ de fáng jiān tài luàn le.	你的房间太乱。 nǐ de fáng jiān tài luàn.	你昨天去看电影了。 nǐ zuo tiān qù kàn diàn yǐng le.	你昨天去看电影。 nǐ zuo tiān qù kàn diàn yǐng.	他在上班。 tā zài shàng bān.	他在上班了。 tā zài shàng bān le.	今天感觉很好了。 jīn tiān gǎn jue hén hǎo le.	今天感觉很好。 jīn tiān gǎn jue hén hǎo.	菜有点儿咸了。 cài yǒu diǎn er xián le.	菜有点儿咸。 cài yǒu diǎn er xián.	Which sentence more strongly implies that I know how to swim now, but I didn't before? 以下哪个句子更表示出我现在我会游泳但以前不会?	Which sentence more strongly implies your dress is shorter than it was before? 以下哪个句子更表示出你的裙子比以前短?	Which sentence more strongly implies that I know his name now, but I didn't know it before? 以下哪个句子更表示出我现在知道了他的名	Which sentence more strongly implies that I got into college recently, but I didn't before? 以下哪个句子更表示出我现在上大学以前没有?	What state do you live in? 您住在那个州?	What is your age? 您的年龄?	Please describe your Mandarin level: 请描述您的中文水平:	
{"ImportId":"QID21"}	{"ImportId":"QID22"}	{"ImportId":"QID23"}	{"ImportId":"QID24"}	{"ImportId":"QID26"}	{"ImportId":"QID27"}	{"ImportId":"QID28"}	{"ImportId":"QID29"}	{"ImportId":"QID30"}	{"ImportId":"QID31"}	{"ImportId":"QID32"}	{"ImportId":"QID33"}	{"ImportId":"QID34"}	{"ImportId":"QID35"}	{"ImportId":"QID36"}	{"ImportId":"QID37"}	{"ImportId":"QID39"}	{"ImportId":"QID40"}	{"ImportId":"QID41"}	{"ImportId":"QID42"}	{"ImportId":"QID48_TEXT"}	{"ImportId":"QID49"}	{"ImportId":"QID50"}	
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0	1	0	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	alabama	5564	1	
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0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	CA	2534	1	
0	1	1	0	1	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	CA	4554	1	
1	1	0	1	0	1	0	1	0	1	1	1	1	0	1	1	1	0	1	1	CA	4554	1	
1	1	1	1	0	1	0	1	0	0	1	1	1	0	1	1	1	0	1	1	CA	4554	1	
1	1	1	1	0	1	0	1	0	0	1	1	1	0	1	1	1	0	1	1	CA	4554	1	
1	1	1	1	0	1	0	1	0	0	1	1	1	0	1	1	1	0	1	1	CA	4554	1	
0	1	1	1	0	1	0	1	0	0	1	1	1	0	1	1	1	0	1	1	CA	4554	1	
1

1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	New Jersey	4554	1	
1	1	1	0	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	New Jersey	5564	1	
1	1	0	1	1	0	1	1	0	1	1	1	0	0	1	1	1	1	1	New Jersey	5564	1	
0	1	1	0	1	0	1	0	0	1	1	1	1	0	1	1	1	1	1	nj	5564	1	
0	1	1	1	1	1	0	1	0	1	1	0	0	1	0	1	1	1	1	NJ	5564	1	
1	1	0	0	0	0	1	0	0	1	1	0	1	0	1	0	1	1	0	NJ	5564	1	
0	1	1	1	1	0	1	0	1	1	1	0	0	1	1	1	1	1	1	Nj	5564	1	
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0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	WA	65	1	
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1	0	0	1	1	0	1	1	1	1	1	1	0	1	0	0	1	0	1	中国四川省绵阳市	5564	1	
0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	加州	5564	1	
0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	加州	4554	1	
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1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	加州	65	1	
0	1	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1	加州	5564	1	
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0	0	1	0	1	0	1	1	0	1	1	0	0	1	0	0	1	1	1	加州	4554	1	
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0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	加州	3544	1	
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1	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	0	1	加州	1824	3	
1	1	0	1	1	0	1	0	0	1	1	0	0	1	1	0	1	0	1	加州	65	3	
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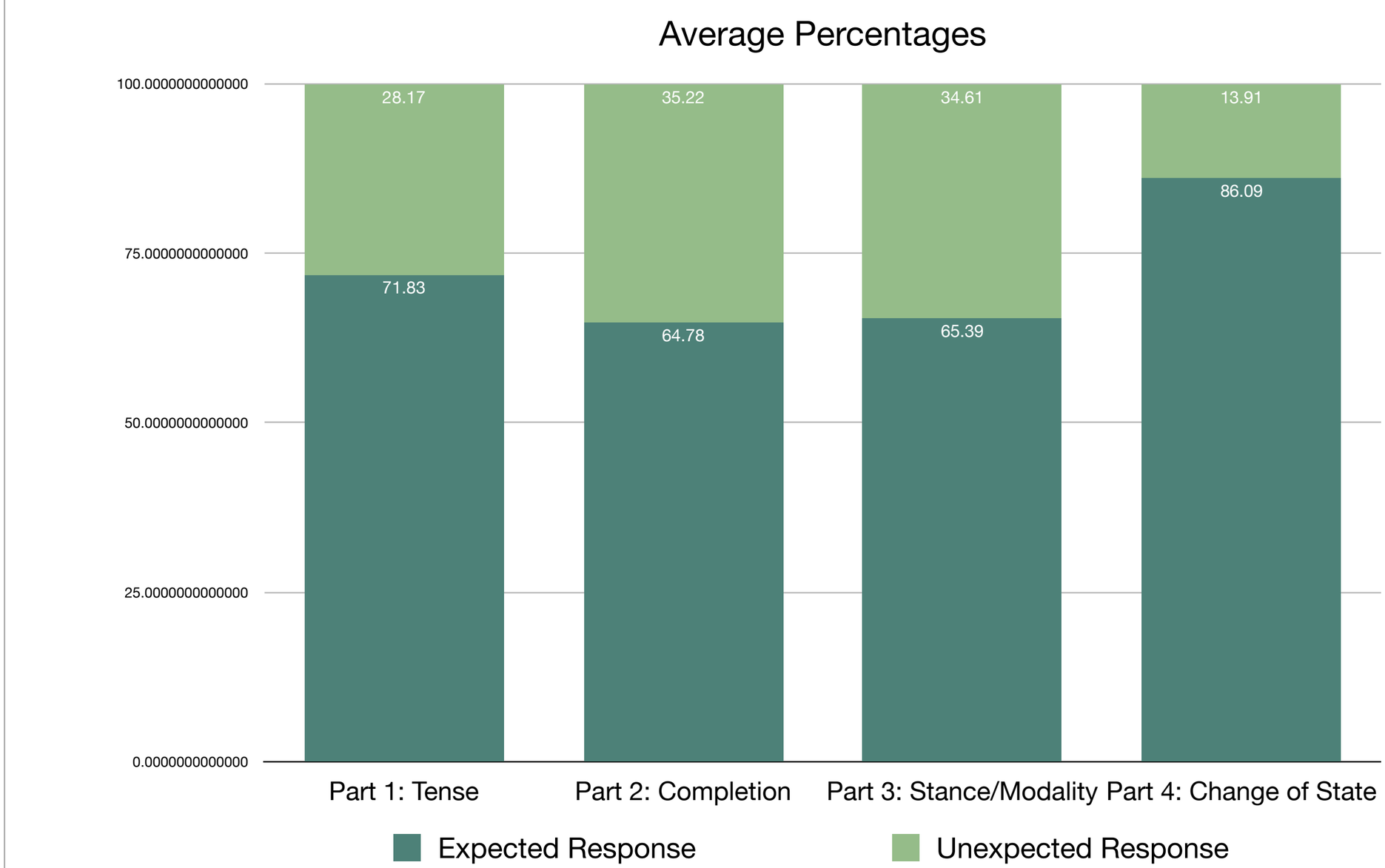
0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	加州	5564	1	
0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	0	加洲	3544	1	
1	1	0	1	1	0	1	0	0	1	1	0	1	1	1	1	1	1	1	北卡	5564	1	
1	1	0	1	1	1	0	1	0	1	1	1	0	1	0	1	1	0	1	华盛顿州	4554	1	
0	1	1	1	1	1	1	1	0	0	1	1	0	1	1	0	1	1	1	台灣	5564	1	
1	1	1	1	1	0	1	0	0	1	1	0	0	1	0	1	1	1	1	神州	65	1	
53	91	74	88	77	52	97	71	36	99	108	45	60	84	66	86	115	86	92	103			
46.0869565217391	79.1304347826087	64.3478260869565	76.5217391304348	66.956521739130 4	45.2173913043478	84.3478260869565	61.7391304347826	31.304347826087	86.0869565217391	93.9130434782609	39.1304347826087	52.1739130434783	73.0434782608696	57.3913043478261	74.7826086956522	100	74.7826086956522	80	89.5652173913043			
				Part 2	64.7826086956522	35.2173913043478								Part 3	65.3913043478261	34.6086956521739		Part 4	86.0869565217391	13.9130434782609		

Table 2

	Part 1: Tense	Part 2: Completion	Part 3: Stance/ Modality	Part 4: Change of State
Expected Response	71.8260869565217	64.7826086956522	65.3913043478261	86.0869565217391
Unexpected Response	28.1739130434783	35.2173913043478	34.6086956521739	13.9130434782609