

Aspect Measure Versus Event/State Measure, The Present Perfective Aspect, The Present Imperfective Aspect, and The Present Perfective Progressive Aspect in English and Mandarin, and The Mandarin Particles “Le”, “Zheng”, “Wan”, “Zhe”, “Zai”

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Abstract

This paper is my proposal of: the foundation of perfective and imperfective aspect measure with event measure, across languages, the grounds of the contrasts and compatibility between the aspects across languages, and the syntax and semantics of the Mandarin particles “Le”, “Zheng”, “Wan”, “Zhe”, “Zai”.

I propose the following¹:

The Mandarin particle “le”, at the post-predicate phrase position (i.e. the position after the complement of a predicate), is complementarily a present perfective marker, and a present imperfective marker. This post-predicate phrase “le”, either introduces the starting point of a type event, or the starting point of a token event. This post-predicate phrase “le₁”, introduces the starting point of a token event, when this sentence with “le₁”, is uttered, prior to the completion of this event, denoted by the verb phrase, to which “le₁” attaches. This post-predicate phrase “le₁”, introduces the starting point of a type event, when this sentence with “le₁”, is uttered, after the completion of this event, denoted by the verb phrase, to which “le₁” attaches.

This delicate mechanism, presented by this Mandarin particle “le”, at a post-predicate phrase position, is a mechanism composed of syntax, semantics, and pragmatics. This Mandarin particle “le”, at a post-predicate position (i.e. the position after a predicate), simultaneously signals important information: Aspect and tense, is interpreted, in relation to event partitions.

This proposal of a post-predicate phrase “le”, further illustrates the interesting contrast to the English present perfective aspect, English present imperfective aspect, and English present perfective progressive aspect, with a set of findings: One is that, the English present perfective progressive aspect, and the Mandarin post-predicate phrase “le”, are exact counterparts. This paper in addition provides a summary of this universal and parametric blueprint of the aspects in English and Mandarin, with regard to a state-denoting predicate and an event-denoting verb. How the computation, of this schema, of aspect and event measure, is at work, is addressed.

As an illustration of how the scope of the Mandarin particle “le” is elevated, “The Superman Phenomenon” is proposed. “The Changchang (Often) Phenomenon” illustrates the (in)compatibility of this adverbial and the particle “le”.

Keywords: Aspect, Event, State, Mandarin Particles, Type and Token

1. Introduction

1.1 The Syntax and Semantics of the Mandarin Particle “Le”

In the literature, the Mandarin particle “le” has been taken to have not much of inherent semantic encoding (Ljungqvist 2007, p194) or syntactic decomposition at a sentence final or a post-verbal position.

¹ This full paper is the author’s proposal, except otherwise notified.

In this paper, the meanings of the Mandarin particle “le” with its syntactic positions are researched, with the intriguing composition of tense, aspect, event and state. I propose that a post-predicate phrase “le” introduces the composition of aspect or tense, and complementarily: the starting point of a token event e and that of the type event E of this token event e.

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| (1)(i) <i>A chang zhe shou ge le.</i>
A sing this CL song LE
“A began to sing this song.” | (ii) <i>A chang le zhe shou ge.</i>
A sing LE this CL song
“A sang this song.” | (iii) <i>A dang le chaoren.</i>
A be LE superman
“A has been a superman.” |
| (2)(i) <i>A ling le ta pengyou jiaoao.</i> (ii) <i>A ling ta pengyou jiaoao le.</i> (iii) A has sung.
A make LE he friend proud
“A made his friends proud.” A make he friend proud LE
“A made his friend proud.” | | |

With an Event Denoting Verb: Section 1.1.1 to 1.1.5

1.1.1 A Post-Predicate Phrase LE as a Present Imperfective Marker

(1)(i) is true if it is uttered after the first note pronounced by A for this singing event, which is the starting point of this token singing event introduced by this “le_{EVENT}” — (c). (H. W. W. Cheng, 2011) This post-predicate phrase “le_{EVENT}” introduces the starting point of this token event. This post-predicate phrase “le_{EVENT}” is uttered, *prior to the completion of this event*, denoted by the verb phrase, to which this “le_{EVENT}” attaches. This post-predicate phrase “le_{EVENT}”, with which the sentence is uttered, prior to the completion of this event, illustrates against that this “le_{EVENT}” is exactly a present perfective marker. Hence, by all of the above, this post-predicate phrase “le_{EVENT}”, is a present imperfective marker.

1.1.2 Complementarily, A Post-Predicate Phrase LE as a Present Perfective Marker

In (1)(i), this post-predicate phrase “le_{EVENT}”, *complementarily* introduces the starting point of this type singing event, when this sentence is uttered, *after the completion of A’s singing event*. The starting point of this type singing event, is exactly this token event of A’s singing this song. This post-predicate phrase “le_{EVENT}”, with which the sentence is uttered after the completion of this event, illustrates against that this “le_{EVENT}” is exactly a present imperfective marker. Hence, by all of the above, this post-predicate phrase “le_{EVENT}”, is a present perfective marker.

By 1.1.1 and 1.1.2, a post-predicate phrase “le”, is complementarily a present imperfective marker and a present perfective marker, which complementarily composes the architecture of a token event and a type event.

1.1.3.1 During the Utterance or After the Utterance: The Pragmatic Device

The pragmatic device, of the utterance of this sentence, with a post-predicate phrase “le”, precisely distinguishes whether this post-predicate phrase “le”, is a present imperfective marker, or a present perfective marker. This is indicated in 1.1.1, and 1.1.2.

1.1.3.2 A Post-Predicate Phrase LE Does not Appear to be Simultaneously a Present Perfective Marker and a Present imperfective marker

A post-predicate phrase “le” does not appear to indicate the simultaneous occurrence of a perfect aspect, and an imperfect aspect. This is illustrated in the English sentence in (1)(iii)a. (1)(i), could be uttered, right after the first notice the speaker receives from A’s singing this song. For the utterance of (1)(i), prior to the completion of the sentence, there is no period of observation, or expectation, of a perfect aspect, from the speaker. On the other hand, with this pragmatic device, when (1)(i) is uttered after the completion of this sentence, at which it is exactly a

perfect aspect, this event is not on-going. On the contrary, (1)(iii)a, with this simultaneity of the perfect aspect and the imperfect aspect, is uttered, during A's singing this song, which is indicated by this imperfect aspect.

(1)(iii)a. A has been singing this song.

1.1.4 A Post-Predicate Phrase LE Invariantly as an Implication

In addition, this sentence with this post-predicate phrase “le_{EVENT}”, invariably implies that (A) this is A's first event of singing this song, and that (B) he will sing this song in the future. This is illustrated in (1)(i). This is further supported, by (C) and (D): (C) When (1)(i) is uttered, if there are other token events of A's singing this song, prior to the most current event of A's singing this song, the interlocutor will immediately respond: “A has sung this song before”. (D) In comparison to (1)(ii), the implication of (1)(i), of A's singing this song in the future, is apparent. The implications (A)(B), of this post-predicate phrase “le_{EVENT}”, is invariant, when this “le_{EVENT}”, is either a present imperfective marker, or a present perfective marker. Namely, the implications (A)(B), of this post-predicate phrase “le_{EVENT}”, is invariant, when this sentence is uttered, during the occurrence of this event e, denoted by the verb phrase, to which “le_{EVENT}” attaches, or after the completion, of this event e, denoted by the verb phrase, to which “le_{EVENT}” attaches.

1.1.5 A New Type of Indexed Perfective Aspect Introduced by the Post-Predicate Phrase “Le”

This post-predicate phrase “Le_{EVENT}”, focuses on one *specific event(s)*, and signals the status of it. This post-predicate phrase “Le_{EVENT}” simultaneously, introduces a new type of perfective aspect, which focuses on exactly one token event(s), without the reference to the event occurrences, prior to this token event, denoted by the verb phrase, to which “Le_{EVENT}” attaches. Call this type of perfective aspect, an indexed perfective aspect, for which the specific token event(s) is indexed. This is illustrated by (1)(i), when this sentence is uttered, after the completion of A's singing this song. On the other hand, for the perfective aspect in English, illustrated by (2)(iii), repeated here, if any one or more *unspecific* event, denoted by this verb “sung”, occurs, in the observation period, this sentence is true. Independent of the syntactic positions, this Mandarin particle “le”, indicates the aspect or tense of a sentence, exactly with regard to one indexed event(s).

This perfective aspect introduced by the post-predicate phrase “le”, which is identical to the perfective aspect, takes *an observation period*. This is distinguished from the post-predicate “le_{EVENT}” as the past tense marker. Suppose B is in a formal concert, at which it is not polite to speak. B is to wait toward the end of this concert, to tell C that the soprano A has sung this song he dislikes. He would have uttered (1)(i), instead of (1)(ii), repeated here. This scenario further indicates, that the implication illustrated in 1.1.4, is independent from negativity or positivity.

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| (1)(i) <i>A chang zhe shou ge le.</i>
A sing this CL song LE
“A began to sing this song.” | (ii) <i>A chang le zhe shou ge.</i>
A sing LE this CL song
“A sang this song.” | (2)(iii) A has sung. |
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1.1.6.1 With a State-Denoting Verb: The Post-Predicate “Le”, and the Post-Predicate Phrase “Le”

A Post-Predicate “Le”, with a State-Denoting Verb

Further complexity arises with a post predicate “le”, when it attaches to an event denoting or a state denoting verb phrase: A post predicate “le_{EVENT}” is a past tense marker for the former (see 1.1.7), while for the latter, I propose that “le_{STATE}” introduces the starting point of the token state T, without the introduction of the starting point of the type state of this token state T. This proposal corresponds to the fact (I)(II) that, for instance: (I) when (1)(iii) with a post-predicate “le_{STATE}” is uttered, A is a superman. Further, (II) there is not at any point when (1)(iii), could be uttered, when A is not a superman. (1)(iii) is repeated here. (1)(iii) is not acceptable when it is uttered, at the time

that A is not a superman. Hence, the utterance time of (1)(iii), is always during the occurrence of this token state, denoted by the verb, to which this post-predicate “le” attaches.

A Post-Predicate Phrase “Le”, with a State-Denoting Verb

A post-predicate phrase “le_{STATE}”, is exactly identical, with a post-predicate phrase “le_{EVENT}”, in 1.1.1, in that: (A) It introduces the starting point of this state. (B) This state is an ongoing state during the utterance of this sentence. This is one of the proofs that, the present imperfective marker “le_{EVENT}” in 1.1.1, namely, the imperfective aspect, is interpreted, with event partitions. This proposal is based on that, invariantly, with regard to (A), (B), a post-predicate phrase “le_{EVENT}”, and a post-predicate phrase “le_{STATE}”, are identical, except, exactly that, with “le_{EVENT}”, the verb, it attaches to, denotes an event, and with “le_{STATE}”, the verb, it attaches to, denotes a state. On the other hand, the other proof indicates that, this post-predicate phrase “le_{STATE}”, with an identical status in (A), (B), as a post-predicate phrase “le_{EVENT}”, has no familiar terminology in aspect or tense for its interpretation.

For further illustration, (1)(iii) is true when jointly: It is uttered after the starting point of the state T’ that A is a superman, and that A is currently and on-going-ly a superman. Hence, a post-predicate “le_{STATE}”, which attaches to a state-denoting verb in (1)(iii), introduces the starting point of this token state T’. In addition, with a post-predicate “le_{STATE}”, there is no implication of the future occurrence of the token states of this state type. Hence, a post-predicate “le_{STATE}” does not introduce the type state of the token state, as the T’ in (1)(iii). This is in contrast to the implication stated in 1.1.4. (2)(i), (ii) illustrate this point, too.

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| (1)(iii) <i>A dang le chaoren.</i> | (2)(i) <i>A ling le ta pengyou jiaoao.</i> | (ii) <i>A ling ta pengyou jiaoao le.</i> |
| A be LE superman | A make LE he friend proud | A make he friend proud LE |
| “A has been a superman.” | “A made his friends proud.” | “A made his friend proud.” |

1.1.6.2 The Post-Predicate Phrase “Le”, with a Verb Phrase, which Indicates a State

The Mandarin “shi (be)” turns the following verb phrase to a state-denoting verb phrase. This is illustrated in (1)(iii) and (1)(iv). In this instance, either a post-predicate “le”, or a post-predicate phrase “le”, indicates the state, of the completion, of the event, of A’s singing this song.

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| (1)(iii) <i>A shi chang le zhe shou ge.</i> | (1)(iv) <i>A shi chang zhe shou ge le.</i> |
| A be sing LE this CL song | A be sing this CL song LE |
| “A is at the state of having sung this song.” | “A is at the state of having sung this song.” |

1.1.7 The Post-Predicate “Le”, with an Event-Denoting Verb, is a Past Tense Marker²

On the other hand, for a post-predicate “le”, with an event denoting verb, in (1)(ii), I propose this post predicate “le_{EVENT}” is a past tense marker, which indicates the completion of this token event, denoted by the verb, to which “le_{EVENT}” attaches. With this post-predicate “le_{EVENT}”, there is no such implication as in 1.1.4.

1.1.8.1 The Post-Predicate “Le”, with a Modal

A modal provides an interesting context, at which, that *aspect and tense is interpreted with the even partition*, is further proposed and supported. 1.1.7 illustrates that a post-predicate “le” indicates the completion of the event. In a none-modal context, it is a past-tense marker. This is illustrated in (2)(iv). (2)(v) illustrates this post-predicate “le_{EVENT MODAL}” in a modal context. (2)(v) refers to the possibility of A’s completion of singing this song. This “le_{EVENT}” identically indicates the completion of the event of A’s singing this song, both in (2)(iv), and (2)(v). Here, (2)(v) is “interpreted” as a perfective aspect in English. In fact, this post-predicate “le” in (2)(v), does not

² Further complexity arises with a modal context. This is elaborated in 1.1.8.

denote differently, from that, in (2)(iv). Different from the familiar perfective aspect, “le” always indicates an indexed³, or specific, event or state. In the English perfective aspect, no indexed event or state was focused. If one or more unspecific event, denoted by the verb phrase, occurs, in the observation period, a perfective sentence is true. This is illustrated in (2)(vi). (2)(vii) and (2)(viii), illustrate that, a post-predicate “le”, introduces this indexed event, independent of this indefinite NP complement of the verb. That is, either (2)(vii) or (2)(viii) is uttered, with regard to, a specific token event of singing, or gestures. An indefinite NP complement of the verb, to which “le” attaches, does not influence this indexation.

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| (2)(iv) <i>A chang le zhe shou ge.</i>
A sing LE this CL song
“A began to sing this song.” | (v) <i>A keneng chang le zhe shou ge.</i>
A could sing LE this CL song
“A could have sung this song.” | (vi) A has watched this movie. |
| (vii) <i>A chang le ge.</i>
A sing LE song
“A sang.” | (viii) <i>A keneng chang le ge.</i>
A could sing LE song
“A could have sung.” | |

1.1.8.2 The Post-Predicate Phrase “Le”, with a Modal

A clause with a post-predicate phrase “le”, and a modal, has three meanings. This is illustrated in (2)(x). The post-predicate phrase “le” with a modal in a clause, is compatible with the proposals indicated in 1.1.1, 1.1.2, 1.1.3, 1.1.4, and 1.1.5. That is: (A) when the speaker hears the first node of a melody, which resembles this song, prior to the completion of this melody, (2)(x) could be uttered. This post-predicate phrase “le” is a present imperfective marker. (B) After the completion of this melody, which resembles this song, (2)(x) could be uttered. This post-predicate phrase “le” is a present perfective marker. In this scenario, (2)(x) has the implication indicated in 1.1.4. (C) (2)(x) has another meaning. It could mean “A could sing this song in the future”. This meaning further supports 1.1.4.

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| (2)(ix) <i>A chang zhe shou ge le.</i>
A sing this CL song LE
“A began to sing this song.” | (x) <i>A keneng chang zhe shou ge le.</i>
A could sing this CL song LE
“A could have been singing this song.”
Or “A could have sung this song.”
Or “A could sing this song in the future.” |
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1.1.9 An Indexed Event or State

An indexed event, or an indexed state, indicates a fixed event, or a fixed state. (2)(vii) illustrates that when the speaker hears a specific instance of A’s singing a song, or any detection of such, this sentence with a post-predicate “le”, or a post-predicate phrase “le”, is uttered. (2)(viii) simultaneously illustrates that this sentence with a post-predicate “le”, or a post-predicate phrase “le”, is uttered, when the speaker has detected any signs at a specific instance, which could support A’s singing this song. Either (2)(vii) or (2)(viii) does not make reference to the events, other than this indexed event, the former of which, occur, prior to this indexed event. This is different from the familiar perfective aspect, which does not make reference to a specific token event, or its corresponding signs.

Analogously, (2)(xi) illustrates this indexed state, of his being the superman, at the utterance time. The acceptability of (2)(xi) does not make reference of the occurrence of any states, other than this indexed state, denoted by the verb, or verb phrase, to which “le” attaches.

In (2)(vii) and (2)(viii), le₁ and le₂ are present complementarily.

³ See 1.1.9.

- (2)(vii) *A chang (le₁) ge (le₂)*.
 A sing LE song LE
 le₁: “A sang.”
 le₂: “A is singing.”
 Or “A has sung.”
- (viii) *A keneng chang (le₁) ge (le₂)*.
 A could sing LE song LE
 le₁: “A could have sung.”
 le₂: “A could have been singing.”
 Or “A could have sung.”
 Or “A could sing in the future.”
- (2)(xi) *A dang (le₁) chaoren (le₂)*.
 A be LE superman LE
 “A has been a superman.”

1.2 The Dual Syntactic and Semantic Identity of a Post Predicate Phrase “Le”, the Dual Syntactic and Semantic Identity of a Post Predicate “Le”, and the Parallelism between Aspect and Event

1.2.1 The Dual Syntactic and Semantic Identity of a Post Predicate Phrase “Le” and the Parallelism between Aspect and Event

From my proposal above, the Mandarin particle, the post predicate phrase “Le”, establishes the complex architecture of the token and the type event, by complementarily introducing the starting point of a token event and that of a type event. In addition, I propose that: (1) By the introduction of the starting point of a token event, it is a present imperfective marker. (2) By the introduction of the starting point of a type event, it is a present perfective marker. (3) That the post-predicate phrase “le” is complementarily a present imperfective marker and a present perfective marker from (1), (2), in addition suggests that a present imperfective marker could complementarily be a present perfective marker in a sentence. The Mandarin Particle “Le” at a post-predicate position is hence an element of a dual syntactic and semantic identity. Based on (1), (2), I propose the schema of aspect measure based on event measure, illustrated in the following sections.

1.2.2 The Dual Syntactic and Semantic Identity of a Post-Predicate “Le”

On the other hand, I propose that: a post-predicate “le” is another element which has dual roles as a past tense marker, when it attaches to an event-denoting verb, without a modal context. Otherwise, a post-predicate “le” indicates an on-going state, when it attaches to a state-denoting verb.

This is illustrated in (1)(ii), (1)(iii), respectively. (1)(ii) and (1)(iii) are repeated here.

- (1)(ii) *A chang le zhe shou ge.* (iii) *A dang le chaoren.*
 A sing LE this CL song A be LE superman
 “A sang this song.” “A has been a superman.”

In addition, a post-predicate “le”, or a post-predicate phrase “le”, when each of which attaches to a state-denoting verb, introduces the starting point of a state. This means, at the time of the utterance, the state denoted by this verb phrase, is on-going. This is illustrated in (2)(xi). (2)(xi) is repeated here.

- (2)(xi) *A dang (le₁) chaoren (le₂)*.
 A be LE superman LE
 “A has been a superman.”

1.3 Aspect Measure V. S. Event/State Measure

I propose the Schema for the Measure of Aspects across languages, with the Token Event/State Measure, and the Type Event/State Measure, with regard to the Utterance Time of a Sentence. It is here illustrated with the Mandarin Particle “Le”, the English Present Perfective Aspect, the English Present Imperfective Aspect, and the English Present Perfective Progressive Aspect, in and based on Section 3 to Section 14. This schema and these

results provide a universal and parametric blueprint of the aspects in Mandarin and English, with regard to a state-denoting predicate, and an event-denoting verb. How the computation of this schema is at work is illustrated.

As an illustration of how the scope of the Mandarin particle “le” is elevated in a sentence, The Superman Phenomenon is proposed. The Changchang (Often) Phenomenon illustrates the (in)compatibility of this adverbial and the particle “le”.

2. The Mandarin Particle “Le” at a Post-Predicate or a Post-Predicate Phrase Position

A post-verbal “le”, and a sentence-final “le” in the literature, are here called a post-predicate “le”, and a post-predicate phrase “le”, for a better characterization. This is due to that: A post-verbal “le” could appear at the position of a post-predicate, in addition to a verb, and that a sentence-final “le”, could appear at a position in an embedded clause, other than in a sentence-final position. This is illustrated in (2)(xii), and (2)(xiii).

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| (2)(xii) Ta zai canting le. | (2)(xiii) Ta kao shang le rang suoyou ren dou hen yukuai. |
| he at restaurant LE | he take-the-exam pass LE let all people DOU very pleasant |
| “He is at the restaurant.” | “That he passed this exam makes pleasant everyone.” |

2.1 The Particle “Zai” V.S. The Imperfective Marker “Zhe”

I propose that: (A) the particle “zai (at)” attaches to a phrase rather than a head, illustrated in (3)(i)a, and (3)(i)b'. (B) The particle “zhe” attaches to a head rather than a phrase, and “zhe” is an imperfective marker. This is illustrated in (3)(i)c, c', d. Either the particle “zai (at)”, or the particle “zhe”, denotes an on-going event. (3)(i)e demonstrates that, the imperfective aspect, indicated by “zhe”, is embedded, in this present perfective aspect, indicated by the post-predicate phrase “le”. (3)(i)e' demonstrates that, the imperfective aspect, indicated by “zhe”, is embedded, in this past tense, indicated by this post-predicate “le”.

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| (3)(i)a. <i>Ta zai jia.</i> | <i>Ta zai fangjian.</i> |
| he ZAI home | he ZAI room |
| “He is at home.” | “He is at the room.” |

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| (3)(i)b. “Zai” attaches a preposition phrase. | (3)(i)b'. “Zai” attaches to a verb phrase. |
| <i>Ta zai huiyishi.</i> | <i>Ta zai pao caochang.</i> |
| he ZAI conference room | he ZAI run field |
| “He is in the conference room.” | “He is at running on the field.” |

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| (3)(i)c. “Zhe” attaches to a verb. | |
| <i>Ta pao (zhe) caochang *(zhe).</i> | |
| he run IMPERF field | IMPERF |
| “He is running on the field.” | |

- (3)(i)c'. The imperfective marker “zhe” does not attach to a phrase:

*Ta jia *(zhe). / Ta *(zhe) jia.*
he home IMPERF he IMPERF home
“He is being home.”

- (3)(i)d. The imperfective marker “zhe” attaches to a head, rather than a phrase:

Ta [dui / xiang] zhe wo shuohua.
he face face IMPERF me talk
“He spoke, when he was facing me.”

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| (3)(i)e. <i>A dui zhe wo shuohua. le.</i> | (3)(i)e'. <i>A dui zhe wo shuo le hua.</i> |
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A to IMPERF me speak-words LE
 “A has spoken, when he was facing me.”

A to IMPERF me speak LE words
 “A spoke, when he was facing me.”

2.2 The Meaning of a Post-Predicate “Le”, and That of a Post-Predicate Phrase “Le”, Are Different

I propose that a post-predicate “le” and a post-predicate phrase “le” have different syntax and semantics in a sentence. This observation is different from the one in Ljungqvist (2007), illustrated in (3)(i)a, that “a post-verbal ‘le’ (i.e. a post-predicate “le”), and a sentence-final ‘le’ (i.e. a post-predicate phrase “le”), differ merely in the syntactic positions, at which “le” is present, rather than in the inherent semantic encoding (p 194)”.

2.3 A Proposal for the Syntax and Semantics of a Post-Predicate “Le” (Part 1)

(A) In a sentence with exactly one clause, and without a modal context, a post-predicate “le” is a past tense marker, when it attaches to an event denoting verb. This post-predicate “le” is at T in a tense phrase, illustrated in (3)(ii)a1. Even with a gradable verb, a post-predicate “le” is a past tense marker, illustrated in (3)(ii)a3. Analogously, in exactly one clause in a sentence, the adverbial “cai (just)” indicates past tense and is at the spec of T, illustrated in (3)(ii)a2’, (3)(ii)a3’. In (3)(ii)a2’, the post-predicate “le” is at T, and “cai (just)” moves to the spec of T. In a sentence with more than one clause, a post-predicate “le” is not a tense marker, for which a post-predicate “le” appears to function vacuously, illustrated in (3)(ii)a2. In (3)(ii)a2, the event order is indicated by the word order. Hence, in (3)(ii)a2, even without “le₁” or “le₂”, the temporal order of the occurrences of these events, is compatible with these verb phrases, which denote them. Even with a gradable verb, a post-predicate “le” is a past-tense marker, in a compound verb, illustrated in (3)(ii)a4, a4’.

(B) In a sentence, a post-predicate “le” introduces the starting point of a token state, and an on-going state, when it attaches to a state denoting verb. This is illustrated in (3)(ii)a1’.

This proposal is different from the literature (Chao 1968, Li & Thompson 1981, Smith 1997) that “a post-verbal “le” (i.e. a post-predicate “le”) is a perfective marker”.

(3)(ii)a1. *A chang le zhe shou ge.*
 A sing LE this CL song
 “A sang this song.”

(3)(ii)a1’. *A dang le chaoren.*
 A be LE superman
 “A is being a superman.”

(3)(ii)a2. *Meitian A chi (le₁) fan, [cai qu (le₂) xuexiao].* (3)(ii)a2’. *A cai chi le fan.* (3)(ii)a3’. *A cai likai.*
 every-day A eat LE meal then go LE school
 “Everyday A had a meal and then went to school.”

A just eat LE meal
 “A just had a meal.”

A just leave
 “A just left.”

(3)(ii)a3. *A xiaoshi le.* (3)(ii)a4. *A rang B xiaoshi le.* (3)(ii)a4’. *A rang B bian liang le.*
 A disappear LE
 “A disappeared.”

A make B disappear LE.
 “A made B disappeared.”

A make B turn bright LE
 “A turned B to be bright.”

2.4 A Proposal for the Syntax and Semantics of a Post-Predicate Phrase “Le” (Part 2)

In Li, Thompson, & Thompson (1982), Mochizuki (2000), a sentence final particle “le” (i.e. a post-predicate phrase “le”) is described as a marker of the perfect aspect. Further, a sentence final particle “le” (i.e. a post-predicate phrase “le”) is described as a change of state / new situation (Chao 1968; Chan 1980; Melchert 1980; Sybesma 1999, Xiao & McEnery 2004, Soh 2009 among others). (4)(i)a is true, if A switched from the state of not singing, to the state of singing.

Different from the above, and extending from that a sentence final particle “le” is a perfect aspect, I propose:

(A1) A post-predicate phrase “le”, complementarily introduces: (i) the starting point of a token event e , and it is a present imperfective marker, and (ii) the starting point of a type event E , of this token event e , and it is a present perfective marker. (iii) The complementarity between (i), (ii), is devised by the pragmatics: When this sentence, with this post-predicate phrase “ le_1 ”, is uttered, *during the occurrence of this event e*, denoted by the verb phrase, to which “ le_1 ” attaches, this post-predicate phrase “ le_1 ”, is a present imperfective marker. When this sentence, with this post-predicate phrase “ le_1 ”, is uttered, *after the completion of this event e*, denoted by the verb phrase, to which “ le_1 ” attaches, this post-predicate phrase “ le_1 ”, is a present perfective marker. (iv) “Le” focuses on an indexed event or state. (v) By (iv), A post-predicate phrase “le” introduces a new type of perfective aspect, which makes reference exactly to an indexed, or specific, event or state. This is different from the familiar perfective aspect, which makes reference, to one or more than one unspecific token event, which occurs prior to the time of utterance, of the sentence, with a post-predicate phrase “le”. (vi) This new type of perfective aspect, which is introduced by a post-predicate phrase “le”, makes reference exactly to an indexed, or specific, event or state. This perfective aspect is distinguished from the past tense, in that, it takes *an observation period*. In comparison, a past tense sentence in (3)(iv), is a report of a completed event, without this observation period. Suppose A was eager to inform B of certain information, while unaware of this, C appeared and have been talking to A. After A finally could talk to B, he said, “(3)(iii)”. (3)(iii) indicates this new type of perfect aspect, which is introduced by a post-predicate phrase “le”, which refers to an indexed event, and takes an observation period. (vii) A post-predicate phrase “le”, has the consistent implication that, this token event, or this token state, denoted by the verb, to which a post-predicate phrase “le” attaches, will occur in the future. Further, this token event, or this token state, denoted by the verb, is the lowest limit to increase. This is illustrated by the contrast between a post-predicate phrase “le”, which indicates this implication, and a post-predicate “le”, which does not indicate this implication, in the contrast between (4)(i)a, and (4)(i)b, and the contrast between (4)(i)c, and (4)(i)d. (4)(i)a illustrates the implication, of the future occurrences, of A’s singing sings, in contrast to (4)(i)b. (4)(i)c illustrates the implication of the future occurrences, of A’s taller than B, by 3 inches. In addition, (4)(i)c implies that, A’s taller than B by 3 inches, is the lowest limit, for this topping, to be increased.

- (3)(iii) wo ganzai jiu xiang tidao *(le) zhe jian shi le. (3)(iv) wo ganzai jiu tidao le zhe jian shi.
 I just-now just would mention LE this CL matter LE I just-now just mention LE this CL matter
 “I would like to have mentioned this matter just now.” “I mentioned this matter just now.”

(B1) With a post-predicate phrase “ le_1 ”: (I) (4)(i)a is true, if the sentence is uttered, after the starting point of the event e_1 , denoted by the verb, to which le_1 attaches. (II) If (4)(i)a is uttered prior to the completion of e_1 , “ le_1 ” is a present imperfective marker. (III) If (4)(i)a is uttered after the completion of e_1 , “ le_1 ” is a present perfective marker. (IV) A post-predicate phrase “le” indicates that, prior to this indexed event, or this indexed state, no other event, or state, takes place in the observation period. Namely, this indexed event, or this indexed state, is the first event, with the reference, of this event type, or the first state, with the reference, of this state type, in the observation period. This is illustrated in (4)(i)a, and (4)(i)c. As an illustration, with regard to (4)(i)a: If A has initiated a singing event prior to the indexed singing event e_i , the interlocutor will immediately respond to (4)(i)a, with (4)(i)a’. This response of (4)(i)a’, indicates that, the other of A’s singing event, has occurred prior to e_i , and that (4)(i)a is not true.

Without this particle “le”, (4)(i)e, is true, if the unspecific singing events of A’s, occur prior to the utterance of (4)(i)e, to the speaker’s awareness. This is in contrast to (4)(i)a, in which, a post-predicate phrase “le”, introduces an indexed event.

This simple aspect in (4)(i)e, does not have the characteristics, introduced by a post-predicate phrase “le”, in (A1)(i), to (A1)(vii). (4)(i)e, without the particle “le”, in contrast to (4)(i)b, with a post-predicate “le”, is not marked with a tense. (4)(i)e does have this simple aspect, by default, which could be interpreted as the past tense, the present tense, or the future tense. That is, the simple aspect, is the default of the aspects, in Mandarin, without necessarily any indications, such as from a particle. This illustrates that a Mandarin sentence is not necessarily interpreted with exactly one tense. On the other hand, a Mandarin sentence has exactly one aspect. This is illustrated in the Mandarin sentences in (4)(i)a to (4)(i)i.

(4)(i)f illustrates this proposal (A1)(i) above, that as early as he begins to walk on these five miles, this sentence is true, without his having to complete walking these five miles. (4)(i)h, (4)(i)h', (4)(i)h'', with a definite NP complement, an imperfective marker, and the Mandarin particle “zai (i.e. in the state of)”, in addition, illustrate (A1)(i). The English sentence in (4)(i)g, on the other hand, is true, only when he completes this five miles of walking. The English counterpart in (4)(i)g'', is compatible with (4)(i)f. (4)(i)g' is compatible with (4)(i)c.

(4)(i)a. *A chang ge le.*
A sing song LE
“A has sung.”

(4)(i)a'. *A gangcai jiu chang ge le.*
A just-now just sing song LE
“A has sung just now”

(4)(i)b. *A chang le ge.*
A sing LE song
“A sang.”

(4)(i)c. *A gao B san cun le.*
A top B 3 inch LE
“A has topped B by 3 inches.”

(4)(i)d. *A gao le B san cun.*
A top LE B 3 inch
“A topped B by 3 inches.”

(4)(i)e. *A chang ge.*
A sing song
“A sing songs.”

(4)(i)f. *Ta zou zhe wu li le.*
he walk this five mile LE
“He began to be walking
these five miles.”

(4)(i)g. He has walked these five miles.
(4)(i)g'. A has topped B by three inches.
(4)(i)g''. He is walking these five miles.

(4)(i)h. *A chang zhe shou ge le.*
A sing this CL song LE
“A has sung this song.”

(4)(i)h'. *A chang zhe le.*
A sing IMPERF LE
“A has been singing.”

(4)(i)h''. *A zai chang le.*
A at sing LE
“A is singing.”

(4)(i)i. He is walking.

2.5 Exactly an Indefinite, Unspecific, Quantified, Singular, or Plural Noun Phrase Complement NPC, Opaques the Token Event Measure

I propose that: among singularity, plurality, definiteness, and specificity, of the noun phrase complement, of a predicate, exactly an Indefinite, Unspecific, Quantified, Singular, or Plural noun phrase complement NPC, of the verb phrase, to which “le” attaches, Opaques the Token Event Measure of this post-predicate phrase “le”. This means that, this sentence, with this NPC, and the post-predicate phrase “le”, is unacceptable, when it is uttered, during the occurrence of this first token event, in the observation period. This is illustrated in (5)(i)(b), with (le₂). Hence, this sentence does not introduce the starting point of this token event, and is not a present imperfective marker, when it attaches to this predicate phrase. In this case, this post-predicate phrase “le”, is exactly a present perfective marker. This is illustrated in (5)(i)(b), in which, (le₁), and (le₂), are a past tense marker, and a present perfective marker, respectively.

This opaqueness, is illustrated, in the contrast, of this noun phrase complement, in each pair to follow: (5)(i)a, b, and (5)(i)a', b'. This Token Event Measure, is recovered, by the Specificity, of this NPC. This is illustrated by (5)(i)b, b', c, in which “yi shou ge (one song)”, refers to a specific song. This opaqueness, of the token event measure, by an NPC, is presented in (5).

(5) *A [EventP ΦInd [VptΦInd chang [NptΦInd yi shou ge]]] le.*
A sing one Singular-CL song LE

“A has sung a song.”

(5)(i) A post-predicate “1. le”, or a post-predicate phrase “2. le”, with a definite singular or plural NP complement of the verb, to which “le” attaches:

- (5)(i)a. *A chang (1. le) zhe shou ge (2. le).* (5)(i)a'. *A chang (1. le) zhe xie ge (2. le).*
 A sing LE this Singular-CL song LE A sing LE this Plural-CL song LE
 “1. A sang this song. 2. A has sung this song.” “1. A sang these songs. 2. A has sung these songs.”

(5)(i) A post-predicate “1. le”, or a post-predicate phrase “2. le”, with an indefinite singular or plural NP complement of the verb, to which “le” attaches:

- (5)(i)b. *A chang (1. le) yi shou ge (2. le).*
 A sing LE one Singular-CL song LE
 “1. A sang a song. 2. A has sung a song.”
- (5)(i)b'. *A chang (1. le) yi xie ge (2. le).*
 A sing LE one Plural-CL song LE
 “1. A sang songs. 2. A has sung songs.”

- (5)(i)c. *Ta zou wu li le.*
 he walk five mile LE
 “He has walked five miles.”

3. ASPECT MEASURE V. S. EVENT/STATE MEASURE: The Schema of Universality across Languages Proposed in This Paper

I propose the schema for the measure of aspects and tenses, with the token event/state measure, and the type event/state measure, with regard to the utterance time of a sentence. It is here illustrated with the Mandarin particle “le”, the English present perfective aspect, the English present imperfective aspect, and the English present perfective progressive aspect, in and based on Section 3 to Section 14.

3.1 The Syntax and Semantics of a Post-Predicate Phrase “Le” V.S. The English Present Perfect Aspect

The proposal for the syntax and the semantics of a post-predicate phrase “le” simultaneously presents the structures of the present perfective and the present imperfective aspects, which apply to the English perfective and imperfective aspects as well.

The English Present Perfect Aspect: (4)(i)g, (4)(i)g' illustrates an English Present Perfective Aspect. (4)(i)g, (4)(i)g' are repeated here.

(4)(i)g. He has walked these five miles. (4)(i)g'. A has topped B by three inches.

3.1.1 Identicalness

The English Present Perfective sentence (4)(i)g is true, if in the speaker’s observation period, prior to the utterance of (4)(i)g, he has completed this token event of walking these five miles. This is identical to a post-predicate phrase “le”, as a present perfective marker, when this sentence is uttered, after the completion of this very event. This is illustrated in (1)(i), repeated here.

- (1)(i) *A chang zhe shou ge le.*
 A sing this CL song LE

“A has sung this song.”

With a state-denoting verb, an English Present Perfective sentence is true, if at the time of utterance, this state is present, illustrated by (4)(i)g’.

(4)(i)g’. A has topped B by three inches.

I propose that a type event E, or a type state S, is the minimal component of an English perfect aspect, and the following:

(I) For an English present perfective sentence S, as far as one or more token events e, denoted by the verb in S, as the event type E of e, occur, prior to the utterance of S, S is true. This is illustrated in (4)(i)g.

(4)(i)g. He has walked these five miles.

(II) With a state denoting verb in a sentence SE: (A) An English perfective sentence sees the type state S. This means that one or more occurrences, of the token states s, of the type state S, prior to the latest token state s at the utterance, do not influence the acceptability of this sentence. (B) There exists one token state, denoted by the verb, which lasts to the utterance time of SE. This is illustrated in (4)(i)g’.

(4)(i)g’. A has topped B by three inches.

(III) By (I), (II), a state denoted by the verb in an English present perfective sentence S, lasts to the utterance of S. An event denoted by the verb in an English present perfective sentence S’, is completed prior to the utterance of S’.

The Mandarin present perfective aspect is compatible with the English present perfective aspect. This compatibility with (III), is presented in respectively (a) a post-predicate phrase “le”, with a state denoting verb, and (b) a post-predicate phrase “le”, with an event denoting verb, which is uttered after the completion of this very event. These are illustrated in (4)(i)c, and (1)(i). (4)(i)c and (1)(i) are repeated here.

(4)(i)c. *A gao B san cun le.*
A top B 3 inch LE
“A has topped B by 3 inches.”

(1)(i) *A chang zhe shou ge le.*
A sing this CL song LE
“A has sung this song.”

(IV) Analogously, a state denoted by the verb in an English past perfective sentence S, lasts to a specific temporal reference point T, prior to the utterance time of S. An event denoted by the verb in an English past perfective sentence S’, is completed prior to a specific temporal reference point T’, prior to the utterance time of S’. These are illustrated in (5)(i)d, and (5)(i)e.

(5)(i)d. A had topped B by three inches. (5)(i)e. A had walked these three miles.

I propose that this post-predicate phrase, Mandarin particle “guo”, is this past perfect marker. By (IV), the English past perfective aspect, is compatible with the Mandarin past perfective aspect. This is illustrated in (5)(i)f and (5)(i)g. In addition to the compatibility, this post-predicate phrase “guo”, indicates that the current state is opposed to the state denoted by the verb. This is illustrated in (5)(i)f. There is no such indication with an event denoting verb with this post-predicate phrase “guo”. This is illustrated in (5)(i)g.

(5)(i)f. *A gao B san cun guo.*
A top B 3 inch LE
“A had topped B by 3 inches,
but A has not topped B by 3 inches now.”

(5)(i)g. *A chang zhe shou ge guo.*
A sing this CL song LE
“A had sung this song.”

3.1.2 Incompatibility

With a post-predicate phrase “le”, exactly an indexed token event e, denoted by the verb, in the sentence S, could be occurring, or could have occurred, prior to the utterance of S. This is different from an English perfect aspect, which sees one or more than one unspecific occurrence of the event denoted by the verb.

Further, an English present perfective sentence does not imply that: the token events e_s , of this very type event E, will occur after the very token event(s) e_2 , at or prior to the utterance time of this identical type event E. This English present perfective sentence is uttered based on e_2 . On the other hand, the post-predicate phrase “le” does imply the future occurrences of the token events e_s , denoted by the verb, of the type event E.

3.2 The Syntax and Semantics of a Post-Predicate Phrase “Le” V.S. The English Present Imperfective Aspect

The above (4)(i)i illustrates the English Present Imperfective Aspect.

(4)(i)i. He is walking.

3.2.1 Identicalness

- Both (i) an English Present Imperfective sentence, and (ii) a sentence with a Post-Predicate Phrase “Le”, in which sentence it is uttered prior to the completion of this very event, could be uttered “after the starting point of the token event e”. Neither of an English Present Imperfective sentence, or a sentence with a Post-Predicate Phrase “Le” as a present imperfective marker, could be uttered after the completion of e. This is illustrated in (4)(i)i and (1)(i).

(1)(i) *A chang zhe shou ge le.*
 A sing this CL song LE
 “A is singing this song.”

(4)(i)i. He is walking.

- Both an English Present Imperfective sentence, and a sentence with a Post-Predicate Phrase “Le” as a present imperfective marker, illustrates the continuation of a token event e, with the sentence uttered after the starting point of the token event e, and prior to the completion of e.
- Both an English Present Imperfect aspect, and the Mandarin Present Imperfect aspect, see or make reference to exactly an indexed token event.
- With (i) the time T of the utterance of an English Present Imperfective sentence S, and (ii) the time T’ of the utterance of the sentence S’ with this Mandarin post-predicate phrase “le” as a present imperfective marker: Both T and T’, occur, during the occurrence of this token event e for reference.

3.2.2 Incompatibility

There does not appear to be incompatibility between an English present imperfective aspect, and the present imperfective aspect, indicated by the Mandarin post-predicate phrase “le”, which is uttered prior to the completion of the indexed token event.

3.3 The Syntax and Semantics of a Post-Predicate Phrase “Le” V.S. The English Present Perfect Progressive Aspect

- illustrates an English Present Perfect Progressive Aspect.
 (5) John has been singing.

3.3.1 Compatibility

The English Present Perfect Progressive sentence, is illustrated in (5)(ii). A Mandarin Present Perfect Progressive sentence, is indicated by a post-predicate phrase “le”, as a present perfective marker, and the imperfective marker “zhe (-ing)”. This is illustrated in (5)(iii).

1. (5)(ii) and (5)(iii) are both to be uttered prior to the completion of this index event.
 (5)(ii) and (5)(iii) are both not to be uttered at the starting point of this event of A’s walking these 5 miles. This is distinguished from the present imperfective aspect, without the present perfective aspect, illustrated in (4)(i)i and (1)(i). Both (4)(i)i and (1)(i) could be uttered at the starting point of this indexed event. This is compatible with that a perfective aspect takes an observation period from the speaker. It is interesting that with this imperfective marker “zhe” in (5)(iii), even (5)(iii) is to be uttered prior to the completion of this indexed event, this post-predicate phrase “le” is a present perfective marker.
2. (5)(iv), with this post-predicate phrase “le” and “zai”, could be uttered immediately after the first step of A’s walking these 5 miles, which is in contrast to (5)(iii). This points out that “zai” is a preposition, which indicates the state, denoted by the predicate phrase which follows it. “Zai” does not appear to be an imperfective marker, like “zhe”.

(5)(ii) A has been walking these 5 miles.

(5)(iii) A zou zhe zhe wu li le.

A walk IMPERF this 5 mile LE

“A has been walking these 5 miles.”

(4)(i)i. He is walking.

(1)(i) A chang zhe shou ge le.

A sing this CL song LE

“A had sung this song.”

(5)(iv) A zai zou zhe wu li le

A at walk this 5 mile LE

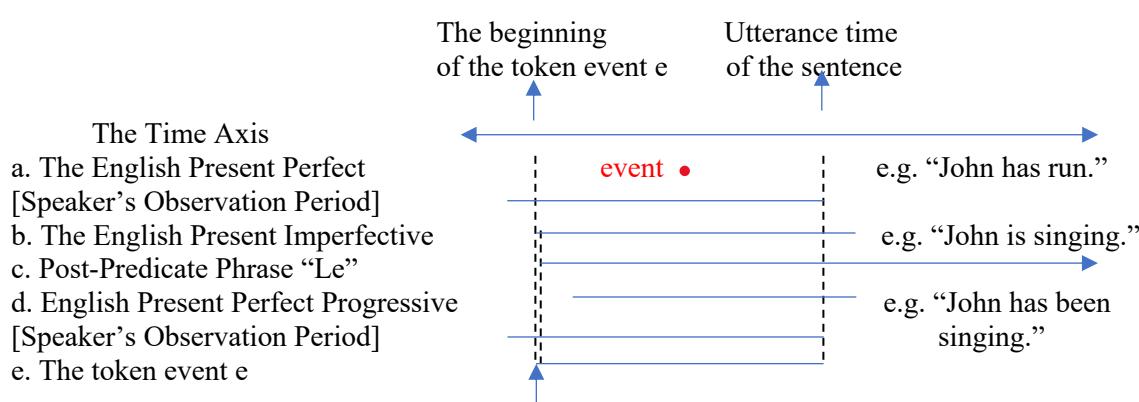
“A is at the state of walking these 5 miles.”

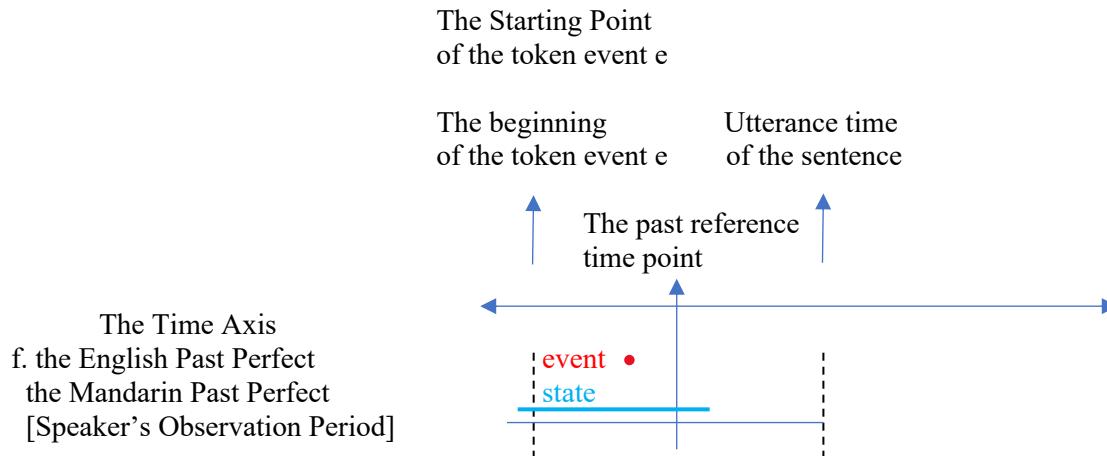
2.3.2 Incompatibility

There does not appear to be a difference between an English Present Perfect Progressive aspect, and the Mandarin Present Perfect Progressive aspect.

4. The Time of the Utterance of the Sentence V.S. The Time of the Occurrence of the Token Event e

The Time in relation to the Tense-Aspect is presented by the Blue Lines and the Blue Lines with Arrows





5. The English Present Perfective Aspect & The English Present Imperfective Aspect & The English Present Perfect Progressive Aspect V.S. The Mandarin Post-Predicate Phrase “Le”

In 6, with the Mandarin post-predicate phrase “le” in the sentence S_1 , the right-headed arrow indicates the implications of the future occurrences, of the token events e , denoted by the verb. If the sentence S_1 is uttered during the occurrence of this indexed token event, it is in the green circle. If the sentence S_1 is uttered after the completion of this indexed token event, it is on the left-headed arrow, at which, this indexed event is the red dot. At this timing of utterance, a post-predicate phrase “le” implies future occurrences of the very token events. The Mandarin post-predicate phrase “le” alternates between these two instances, with the token event measure and the type event measure, in relation to the utterance time. This indexed event e_1 , is the first occurrence of the very token event of this type event E , in the observation period of the speaker.

In addition, a post-predicate phrase “le”, exactly sees a token event or a token state, illustrated in (4)(i)a. If this sentence is uttered at the second token event, instead of the first token event, of an identical type event E , that the context observes, an immediate response to (4)(i)a would be (4)(i)a’.

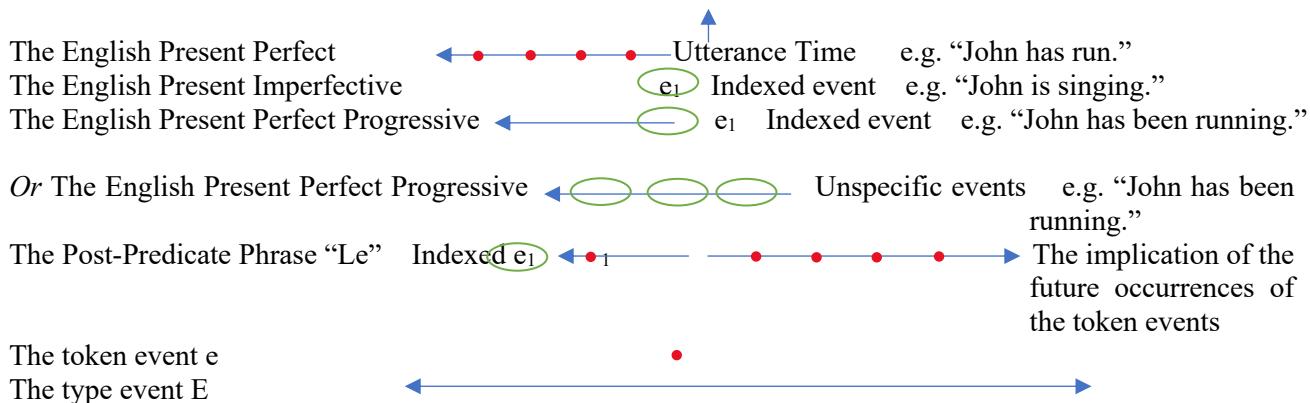
- (4)(i)a. *A chang ge le.*
A sing song_{LE}
“A has sung.”

- (4)(i)a’. *A gangcai jiu chang ge le.*
A just-now just sing song_{LE}
“A has sung just now”

In 6, both the English present imperfective aspect, and the English present perfect progressive aspect, are interpreted based on this indexed event e_1 . The complementary alternative, for the English present perfect progressive aspect, is that it sees one or more than one unspecific, on-going events, in the observation period. These two complementary alternatives, for the English present perfective aspect, are both simultaneously a type event measure, and a token event measure.

The English Perfect Aspect exactly sees a type event E , or a type state S , prior to the utterance time. Namely, that the English perfect aspect is interpreted with one or more than one unspecific token event in a type event E , or with one or more than one unspecific token state in a type state S . On the other hand, a post-predicate phrase “le”, or a post-predicate “le”, sees the indexed token event e , or the indexed token state e , prior to the utterance time.

6. The Graph Presentation: The English Present Perfective Aspect & The English Present Imperfective Aspect & The English Present Perfect Progressive Aspect V.S. The Mandarin Post-Predicate Phrase “Le”



7. The Logical Presentation of The Mandarin Post-Predicate Phrase "Le"

The post-predicate phrase "le" is presented in (7). (7) is partially referenced from: H. W. W. Cheng (2011).

$$(7) \exists E (\exists e_1 \in E) \wedge [(\forall e' \in e_1)(\forall y \in e_1) \rightarrow (y = e')] \wedge \exists \tau_{LE} \{ \{\tau_{LE} \leftrightarrow [\exists ep \text{ Endpoint of the Utterance Time of S (ep)} \rightarrow (e' \vee e_1)] \wedge \{(ep \rightarrow e_1) \rightarrow (\forall e_2 \in E) [e_2 >_{AT \text{ TEMPORAL AXIS}} ep]\}\}$$

8. State-Denoting Predicates V. S. Event-Denoting Verbs

(8)(i)a. A post-predicate "le", or a post-predicate phrase "le", with a preposition, to which "le" attaches:

(8)(i)a. *A zai *(le) feiji shang (l. le).*
A at LE flight on LE
"1. A has been on the flight."

(8)(i)b. A has been on the flight." (8)(i)c. A has been running.

(8)(i)d. *A dang chaoren le.* (8)(i)d'. *A dang le chaoren.*
A be superman LE A be LE superman
"A has been a superman." "A had been a superman."

(8)(i)b illustrates that an English Perfective Aspect, with a State denoting preposition phrase, sees exactly the type state, too. (8)(i)a illustrates that a post-predicate phrase "le", as a present perfective marker, sees exactly the indexed state, too. In (8)(i)d, this post-predicate phrase "le", with a state denoting verb, introduces the starting point of A's being a superman, which is compatible with the proposal. (8)(i)d is different from (8)(i)d', in that (8)(i)d' could not be uttered at the starting point of A's being a superman, while (8)(i)d could. On the other hand, if B knows that A became a superman last night, A could have immediately told C "(8)(i)d", but not "(8)(i)d'". B could be uttering (8)(i)d' in the next morning. This indicates that in (8)(i)d', this post predicate "le", with a state denoting verb, is a past perfective marker. This past perfective marker, has a time reference, prior to the utterance time of this sentence.

An English Perfective Progressive Aspect demonstrates the simultaneity of the Event Type Measure, and the Event Token Measure. (8)(i)c illustrates this point by this running event, for both the event type measure, and the event token measure. A Mandarin Perfective Progressive Aspect illustrates this point, too. This is illustrated by (8)(i)e. Parallel to an imperfective aspect in English and Mandarin, with an event denoting verb: The English and Mandarin present perfective aspect, with a state denoting verb, in (4)(i)c, both introduce the starting point of this very state, that this state is on-going, at the utterance time. (4)(i)d appears to be a past perfective marker, based on the previous paragraph.

(8)(i)e. *A pao zhe le.*
A run IMPERF LE

(4)(i)c. *A gao B san cun le.*
A top B 3 inch LE

(4)(i)d. *A gao le B san cun.*
A top LE B 3 inch

“A has been running.”

“A has topped B by 3 inches.”

“A had topped B by 3 inches.”

9. As a Brief Summary of the Proposal:

The Aspectual Elements, which Illustrate I to VI to follow, are listed:

I. The Alternation between Event Type Measure, and Event Token Measure:

A Post-Predicate Phrase “Le”, with an Event denoting verb

[If the sentence is uttered *prior to* the completion of the very event: It is a Token event measure, with an indexed event. If the sentence is uttered *after* the completion of the very event: It is a Type event measure, with an indexed event.]

II. The Simultaneity of the Event Type Measure, and the Event Token Measure

An English and Mandarin Perfective Progressive Aspect

III. Sees Exactly the Past Type Event/Type State:

An English Perfective Aspect, with both an Event denoting verb, or a State denoting verb

IV. Exactly Introduces the Starting Point of the Token State s, or the Starting Point of the Token Event e:

A Post-Predicate Phrase “Le”

V. Exactly Sees the Future Type Event, or the Future Type State:

A Post-Predicate Phrase “Le”

VI. Exactly Sees an Indexed Event or an Indexed State

A Post-Predicate “Le” and a Post-Predicate Phrase “Le”

10. This Summary is Presented as This Graph:

A Post-Predicate Phrase “Le”
[Future Type: Event E or States S]

A Post-Predicate Phrase “Le”
[With Both Event and State Denoting Predicates] A Post-Predicate Phrase “Le”
[With Both Event and State Denoting Predicates]

An English Perfective Aspect, with both
an Event denoting verb, or a State denoting verb

An English and Mandarin Perfective
Progressive Aspect

A Post-Predicate Phrase “Le”,
with an Event denoting verb

Event/State Type Measure

Simultaneity
↔
Alternation
↔

An English and Mandarin Perfective
Progressive Aspect

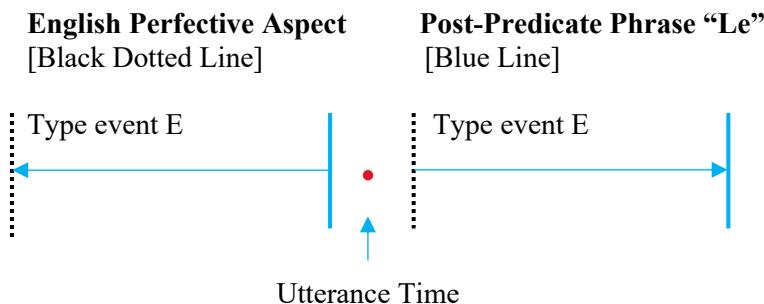
A Post-Predicate Phrase “Le”,
with an Event denoting verb

Event/State Token Measure

11. The Implication of the Future Occurrences of the Event Type E, illustrated by a Post-Predicate Phrase “Le”, and the Type Measure, of an English Present Perfective Aspect, are exact Counterparts in Time:

An English Present Perfective Aspect precisely sees the Past Type Event, up to the utterance time. The Aspect illustrated by A Post-Predicate Phrase “Le”, when the sentence is uttered after the completion of the event, precisely sees the Future Type Event. Hence, the aspect indicated by A Post-Predicate Phrase “Le”, when the sentence is uttered after the completion of the event, and an English Present Perfective Aspect, are exact counterparts in time. See 6 for illustration. This proposal is illustrated in 12.

12. Post-Predicate Phrase “Le” V. S. English Perfective Aspect, Presented on the Axis of Time:



13. Type Event Measure V. S. Token Event Measure V. S. The Computation of This Schema

I propose that: every building block of event measure, which is the basis of aspect measure, is independently accessible in computation, and could be freely composed to form infinite patterns. The minimal building block of event measure, is the token event measure, reflected in an imperfective aspect. An imperfective aspect is independently accessible, such as in a present imperfective sentence. That is, the minimal building block is independently accessible.

In addition, in an English present perfective progressive sentence, there are two complementary alternatives. A sentence with an English present perfective progressive aspect is true, with the type event measure, of a set of unspecific on-going events, or with the type event measure, of an indexed on-going event. The singular token event measure in the latter, indicates that this minimal block of a token event measure is independently accessible. For the former, the simultaneity of the occurrences of the token event measure, and the type event measure, indicates that these minimal building blocks, the token event measure, and the type event measure, could be freely composed. Hence, the computation from the minimal building blocks, of a token event measure, to a type event measure, are independently accessible, and freely composable. It concludes that there are infinite patterns from every minimal building block, in this case, event partitions, and aspect measure, that the human brain could compute and compose.

14. The Particles “Wan” and “Zheng”

I propose the meanings of the Mandarin particles “wan” and “zheng”: (A) The preposition “wan” denotes the endpoint of an event. This is illustrated in (9)(i)a. (9)(i)a is true when this sentence is uttered when A is having the last bite of the meal. (B) The particle “zheng” denotes “be in the state of, of the object denoted by the subject noun phrase in a sentence S, at the utterance time of S”. This is illustrated by (9)(i)b. (9)(i)b is false when A is having the last bite of the meal, and is true after he completes the meal. This post predicate “le” is a past tense marker. Hence, the Mandarin particle “zheng” is the head of a StateP, which is above TP.

(9)(i)a, b. *A zheng chi [a. wan / b. le] fan.*
A ZHENG eat complete LE meal

- “a. A is at a state of completing a meal.” /
- “b. A is at a state of just completing a meal.”

15. Negation and the Mandarin Particle “Le”

(10)(i)a, a', illustrates that either the negation, or the adverbial, is raised to the spec of T, for which the unacceptability of (10)(i)a, a', arise. The present perfective marker “le”, in (10)(i)a', is compatible with the proposal that it introduces the starting point of his often watching this movie. [(10)(i)a' in addition demonstrates that, the post-predicate “le” illustrates precisely the completion of the past Token Event e, denoted by the verb, which mismatches the adverbial, which illustrates the occurrences of more than one unspecific token events of an identical type. — (10)(i)a'] (10)(i)b illustrates that the post-predicate phrase “le” scopes higher than the negation “bu”.

(10)(i)c1, c2, confirm that a post-predicate “le” is a past tense marker, and that a post-predicate phrase “le” sees future Type Event. (10)(i)c2 is uttered possibly in a scenario that he is trying to lose weight, and that he will at least remain eating less than one bowl of rice.

(The examples (10)(i)a, b, and (11)(i)a, are modified from Ljungqvist 2007: 196)

(10)(i)a. **Ta bu chi le zhe wan fan.*

he NEG eat LE this CL rice

“*He had this bowl of rice, and he is not to have this bowl of rice.”

(10)(i)a'. [_{TP} *Ta *(changchang) kan le zhe bu dianying.*]

he often watch LE this CL movie

“He often watched this movie.”

(10)(i)a''. [_{TP} *Ta changchang kan zhe bu dianying le]*

he often watch this CL movie LE

“He has been often watching this movie often.”

(10)(i)b. *Ta bu chi zhe wan fan le.*

he NEG eat this CL rice LE

“He was eating this bowl of rice, but now he is not.”

(10)(i)c1. *Ta chi le budao yi wan fan.*

he eat LE less-than one CL rice

“He ate less than one bowl of rice.”

(10)(i)c2. *Ta chi budao yi wan fan le.*

he eat less-than one CL rice LE

“He begins to eat less than one bowl of rice.”

16. The “Changchang (Often)” Phenomenon:

The Interaction between the Adverbial “Changchang (Often)” and the Post-Predicate Particle “Le”

(11)(i)a, illustrates that the post-predicate “le”, in a one-clause sentence, with an event denoting verb, and without a modal context, is a past tense marker.

(11)(i)a' illustrates that event orders follow the order of the verb phrases in a sentence.

In (11)(i)a, “le_A”, “le_B”, are past tense markers and are both at T. On the contrary, (11)(i)a1, a2, illustrate that neither “le_A” nor “le_B” is a past tense marker. Either the negation “bushi (not)”, or the adverbial “changchang (often)”, scopes over the matrix clause and these two post-predicate “le”. This is different from (10)(i)a⁴.

⁴ For (10)(i)a, refer to the first paragraph in Section 15.

(11)(i)a. *Ta kan (le_A) zhe bu dianying, chi (le_B) fan.*
 he watch _{LE} this CL movie eat _{LE} meal
 With either (le_A), (le_B), or both: “He watched this movie, and then ate.”

(11)(i)a1. *Ta bushi kan (le_A) zhe bu dianying, chi (le_B) fan.*
 he not watch _{LE} this CL movie eat _{LE} meal
 With either (le_A), or (le_B), or both : “He did not watch this movie and then ate.”

(11)(i)a2. *Ta changchang kan (le_A) zhe bu dianying, chi (le_B) fan.*
 he often watch _{LE} this CL movie eat _{LE} meal
 With (le_A), or (le_B), or both: “He often watches this movie, and then eats.”

(11)(i)a3 illustrates identically as (10)(i)a’. In (11)(i)a3, this adverbial “changchang (often)” and this past tense marker “le” are both in this Wh-island. This adverbial “changchang (often)” is raised to the spec of T, and is contradictory with this past tense marker “le” at T⁵. In (11)(i)a4, “le_A” and “le_B” are both past tense markers.

(11)(i)a3. [_{CPI} *Dang ta₁ changchang kan *(le_A) zhe bu dianying*], [_{TP2} *ta₁ chi le_B fan*].
 when he often watch _{LE} this CL movie he eat _{LE} meal
 “When he often watched this movie, he had a meal.”

(11)(i)a4. [_{CPI} *Dang ta₁ kan le_A zhe bu dianying*], [_{TP2} *ta₁ chi le_B fan*].
 when he watch _{LE} this CL movie he eat _{LE} meal
 “When he watched this movie, he had a meal.”

17. The Superman Phenomenon, With a State Denoting Verb, Versus A Post-Predicate “Le”, or A Post-Predicate Phrase “Le”

(12)(i) The Superman Phenomenon, With a State Denoting Verb, Versus A Post-Predicate “Le”, or A Post-Predicate Phrase “Le”:

The Sentence:

[In (12)(i)a, “le₁” and “le₂”, are complementarily present.]

(12)(i)a. *Ta you liliang keyi dang (le₂) chaoren (le₁).*
 he have power able be _{LE} superman. _{LE}
 “With ‘le₁’: He has had the power to be able to be a superman.”
 “With ‘le₂’: He has the power to be able to have been a superman.”

My Proposal:

In (12)(i)b: “Le₁” and “Le₂”, V. S. “Φle₁” and “Φle₂”, are complementarily present.

(12)(i)b. *Ta₁ [_{MATRIX TP} Φle₁ [_{MATRIX ASPP} Φle₁] you liliang [_{TP1} Trace(Φle₁)
 he have power
{ASPP1} Trace(Φle₁) keyi [{TP2} Trace(Φle₁) [_{ASPP2} Trace(Φle₁) Φle₂ [dang (le₂) chaoren
 able be _{LE} superman
 (le₁)]]]]]].*

⁵ For (10)(i)a, refer to the first paragraph in Section 15.

“With ‘le₁’: He has had the power to be able to be a superman.”

“With ‘le₂’: He has the power to be able to have been a superman.”

I propose that:

- (I) With a State-Denoting verb, illustrated in (12)(i)a: (1) either a post-predicate “le₁”, or a post-predicate phrase “le₂”, introduces the starting point of the Token State s, of the Type State S, denoted by the verb. (2) With a post-predicate “le₂”, the token state s, denoted by the verb, in the sentence SE, is on-occurring at the utterance time of SE. With a post-predicate phrase “le₁”, the token state s, denoted by the verb, in the sentence SE, has not occurred at the utterance time of SE.
- (II) By (I)(1), with a State-Denoting verb, “Le₂” is a Present Perfective Marker, which marks both the tense and aspect, instantiated with the operator Φle_2 , which is at the Head of the Aspect Phrase 2. By (I)(2), with a State-Denoting verb, “Le₁” is a Present Perfective Marker, which marks both the tense and aspect, instantiated with the operator Φle_1 , which is at the Head of the Aspect Phrase 2, and moves to the Aspect Phrase 1, and to the Matrix Aspect Phrase. These proposals are illustrated in (12)(i)a. Without “le₁” or “le₂”, this sentence could be interpreted with different tenses, illustrated in (12)(i)a1.
- (III) The Proposal in (II) is extended to “with a State-Denoting Predicate”, which includes a preposition, an adjective, and an adverb, each of which denotes a state, illustrated in (12)(i)a2. (12)(i)a2 illustrates that a post-predicate “le” attaches to a preposition, an adjective, or an adverb, each of which denotes a state.
- (IV) (12)(i)a3 illustrates the proposed “Superman Phenomenon” and the proposal, that with a state denoting predicate, a post-predicate “le” is a present perfective marker.

(12)(i)a1. *Ta you liliang keyi dang chaoren.*
 he have power able be superman
 “He has / had the power to be a superman”

(12)(i)a2. *Ta [PP zai huiyishi]. le. / Ta quaile le. / Zhusuo dasao qinjie le.*
 he at conference-room LE he happy LE living-unit sweep clean LE
 “He has been in the conference room.” / “He has been happy.” / “The living unit has been cleaned.”

(12)(i)a3. *Ta you le liliang keyi dang chaoren.*
 he have LE power able be superman
 “He has had the power to be a superman.”

18. Conclusion

This paper proposes the foundation of perfective and imperfective aspect measure with event measure, across languages, and the grounds of the discoveries of interesting contrasts and compatibility between the aspects across languages, and interesting elements like the Mandarin particle “le”.

Moreover, this paper proposes the syntax and semantics of Mandarin particles, specifically that the Mandarin particle “le” is a present perfective marker and a present imperfective marker. The Mandarin particle “le” complementarily introduces the starting point of a type event, and the starting point of a token event. This paper further illustrates the Mandarin post-predicate “le”, and the Mandarin post-predicate phrase “le”, to the English present perfective aspect, English present imperfective aspect, and English present perfective progressive aspect, with a set of interesting findings. One of the findings is that, the English present perfective aspect, and the Mandarin post-predicate phrase “le”, are exact counterparts. This paper in addition provides a summary of this

universal and parametric blueprint of the aspects in Mandarin and English, with regard to a state-denoting predicate and an event-denoting verb. How the computation of this schema is at work is addressed.

As an illustration of how the scope of the Mandarin particle “le” is elevated, “The Superman Phenomenon” is proposed. “The Changchang (Often) Phenomenon” illustrates the (in)compatibility of this adverbial and the particle “le”.

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