

Aspectual coercion and the aspectual marker *-zhe* in Mandarin Chinese

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Abstract

In this study I discuss the aspectual and morpho-syntactic properties of the imperfective marker *-zhe* in Mandarin Chinese. I demonstrate that this marker is a verbal suffix that expresses the non-progressive aspect. Like other types of aspects, the non-progressive *-zhe* also contains aspectual restrictions; it is naturally compatible with only dynamic stative verbs such as the verb *zuo* 'to sit', and is used to signal continuation of this type of eventuality. However, when *-zhe* is combined with an eventuality other than a dynamic State, aspectual coercion must occur. Accordingly, I argue that the intensifying reading of a sentence containing a static State and the marker *-zhe* (e.g., *Zhege fangjianhei-zhe ne*, 'this room is pretty dark') is due to aspectual coercion. In addition, I also argue that aspectual coercion is demonstrated by morpho-syntactic items in Chinese. I demonstrate that when an Activity or a static State is modified by *-zhe*, linguistic items such as the sentence final particle (SFP) *ne* must be added. This argument suggests that aspectual coercion can be observed in the syntax as well.

Keywords: the non-progressive aspect; aspectual coercion; the imperfective *-zhe*; Chinese linguistics

1. Introduction

It has been argued that Mandarin Chinese uses at least two different mechanisms to mark the imperfective aspect: the progressive marker *zai* and the imperfective *-zhe* (Li & Thompson, 1981).² Syntactically, *zai* appears before the main verb as shown by (1a), whereas *-zhe* appears right after the verb, as demonstrated by (1b):

- (1) a. Lisizai chi fan. b. Lisi chi-zhe fan ne
Lisizai eat rice Lisi eat-zhe rice SFP
'Lisi is eating.'

According to Klein et al. (2000), the semantic functions of these two imperfective markers sometimes overlap. For example, they are both used to indicate that the eating event in (1a) and (1b) is in progress at the reference time. However, in some cases, these two markers focus on different stages of the event they modify. The two sentences in

(2) provide a demonstration:

- (2) a. Lisizaichuandayi b. Lisichuan-zhedayi
Lisizai wear coat Lisi wear-zhe coat
'Lisi is putting on a coat.' 'Lisi is wearing a coat.'

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² Abbreviations: CL = classifier; SFP = sentence final particle; *-le* = the perfective marker.

In (2a), *zai* focuses on the process of the event denoted by the verb *chuan* 'to wear', whereas *-zhe* in (2b) focuses on the duration of the resultant state related to the same event (Yeh, 1993; Smith, 1997). Moreover, certain verbs such as verbs denoting posture/location take only *-zhe*, and never *zai*, as demonstrated in (3):

- | | | | | |
|-----|----|---|----|--------------------------------|
| (3) | a. | *Lisizaizuo | b. | Lisizuo-zhe |
| | | Lisizai sit | | Lisi sit-zhe |
| | | Intended reading: | | 'Lisi is sitting (somewhere).' |
| | | 'Lisi is in the process of sitting down.' | | |

As shown by (3a), the verb *zuo* 'to sit' does not take the progressive marker *zai*; nevertheless, it takes *-zhe*, as seen in (3b), and the resultant state is what the marker focuses on.

In addition to the above linguistic environments in which *-zhe* may or may not appear, this marker also appears directly after an stative predicate as demonstrated by (4) below:

- (4) Neigefangjianhei-zhe ne
that CL room black-zhe SFP
'That room is pretty dark.'

According to Li & Thompson (1981) and He (1992), *-zhe* in (4) functions as an intensifier, meaning 'very/pretty.' However, this type of sentence is highly constrained and only appears in certain northern dialects of Mandarin Chinese.

Finally, the aspectual marker *-zhe* is generally incompatible with a telic event such as *gaina dong fangzi* 'to build that house' in (5a):

- | | | | | |
|-----|----|------------------------------|----|---------------------------------|
| (5) | a. | *Lisigai-zhena dongfangzi | b. | Lisizaigai-zhena dongfangzi |
| | | Lisi build-zhe that CL house | | Lisizai build-zhe that CL house |
| | | | | 'Lisi is building that house.' |

As shown by (5a), the aspectual marker is not compatible with an event denoting an Accomplishment. The sentence is ungrammatical, and indicates neither the process of the house-building nor continuation of the resultant state. The sentence in (5b) shows that the progressive particle *zai* must be added to make the sentence grammatical (Lin, 2002).

Previous studies, such as Yeh (1992) and Smith (1997), argue that the aspectual information expressed by *-zhe* focuses on the duration of a resultant state, an argument which accounts for the grammaticality of the sentences in (2b) and (3b). However, what still needs to be accounted for, given that the readings in (1b) and (4) are not as a result of any action, is the progressive reading of the sentence in (1b), and the intensifying reading of (4). Moreover, it is mysterious that the sentence in (5a) does not have a resultative reading, given that an event denoting Accomplishment has been argued to contain a resultant state (e.g., Dowty, 1979; Moens, 1987; Travis, 2010; among others). To account for the phenomenon, Lin (2002) argues that *-zhe* has selectional properties, and is only compatible with atelic events. This argument adequately accounts for the grammaticality of the sentences containing the aspectual morpheme in sentences (1)-(4) and the ungrammaticality of (5a).

Nevertheless, several unanswered questions remain. For example, from (1) and (4), we can observe that without the SFP *ne*, they suddenly sound incomplete (Tsai, 2008). This incompleteness is not observed in sentences such as (2b) and (3b). In addition, according to Wu (2004), the progressive readings contributed by the progressive *zai* in (1a) and the durative *-zhe* in (1b) in fact show some variations. What causes the semantic difference also needs further investigation.

These phenomena suggest that there must be something more to say about the aspectual marker *-zhe*. Therefore, I revisit the aspectual and morpho-syntactic properties of this marker by addressing the questions in (6):

- (6) a. What are the aspectual properties of *-zhe*?
b. What is the contribution of the SFP *ne* in sentences such as (1) and (4)?
c. What are the morpho-syntactic properties of the morpheme *-zhe*?

To address the first question, I follow Lin (2002) and assume that the aspect represented by *-zhe* has selection properties; it is only compatible with a certain type of eventuality. However, I differ in that I further specify that *-zhe* is compatible with only one type of eventuality: *dynamic States* such as the verb *zuo* 'to sit' in the sense of Bach (1986).

In order to address the second question, I claim that the progressive reading of a sentence such as (1b), and the intensifying reading of a sentence such as (4), are due to aspectual coercion. I argue that the SFP *ne* in (1b) and (4) is in fact a by-product that shows the aspectual coercion process. Finally, to address the last question, I argue that *-zhe* is a verbal suffix that represents the non-progressive aspect; in other words, Chinese contains bound morphemes that reflect aspectual information.

The paper is structured as follows. In Section 2, I discuss the aspectual properties of the morpheme *-zhe* and show that this particle has several aspectual restrictions. In Section 3 I present my own analyses of the function of the morpheme. Finally, in Section 4 I conclude this study.

2. Properties of the Aspectual Marker *-zhe*

Previous studies have argued that aspectual operators such as the progressive aspect have selectional properties. De Swart (1998), for example, indicates that English progressive aspect is compatible with only dynamic events; when a stative event is modified by the progressive aspect, aspectual coercion is involved. The imperfective aspect expressed by the marker *-zhe* is no exception. For instance, Lin (2002) argues that the marker is compatible with only atelic events. In this section, I discuss the compatibility of *-zhe* with different types of eventualities.

2.1 The Morpheme *-zhe* and Atelic Events

According to previous studies such as Lü (1980) and Lin (2002), *-zhe* co-occurs with events denoting Activity and it has a meaning similar to that of the English progressive aspect. I have given an example in (1b) and the sentence in (7) is an example from Lü (1980):

- (7) Tamenzhengzai kan-*zhe* jiemu ne (Lü, 1980)
 they right watch-*zhe* show SFP
 'They are watching the show right now.'

As shown by (7), *-zhe* indicates that the show-watching event is in progress at the reference time. The progressive reading contributed by *-zhe* seems to suggest that it has the same semantic function as the progressive *zai* in a sentence such as (1a). However, Wu (2004) indicates that a semantic difference exists between *zai* and *-zhe* when they are used to express the progressive aspect. He argues that the progressive *zai* is used to present an event ongoing at a single discrete moment in time, whereas the marker *-zhe* is used to present an event lasting over an interval that is longer than one instant. For instance, observe the sentences taken from Wu's (2004) study in (8) below:

- (8) a. Ta zuotian xiawu wudian *zai* kandianshi
 he yesterday afternoon 5 o'clock *zai* watch T.V.
 'He was watching T.V. at 5 o'clock yesterday afternoon.'
- b. *Ta zuotian xiawu wudian kan-*zhe* dianshi
 he yesterday afternoon 5 o'clock watch-*zhe* T.V.
 'He was watching T.V. at 5 o'clock yesterday afternoon.'
- c. Ta zhenggeshangwu kan-*zhe* dianshi
 he whole CL afternoon watch-*zhe* T.V.
 'He was watching T.V. the whole afternoon.'

As (8a) shows, the progressive marker *zai* can appear with an instant adverbial such as *wudianzhong* 'five o'clock'; in contrast, the same adverbial is not compatible with the marker *-zhe*, as demonstrated by (8b). Finally, as shown by (8c), *-zhe* is compatible with an interval adverbial such as *zhenggeshangwu* 'the whole morning.' This is different from the progressive aspect in English, which is compatible with both types of adverbials as demonstrated by (9):

- (9) a. John was watching the show at 5 o'clock yesterday.
 b. John was watching the show between 5 and 6 yesterday.

The sentence in (9a) indicates that the English progressive aspect presents the show-watching event at a single discrete moment in time; in contrast, in (9b) the aspect represents the same event that lasts longer than one instant.

In addition to sentences such as (7), there is another type of sentence that demonstrates the compatibility of *-zhe* with an Activity. The sentences in (10) provide an example:

(10) a. Ta qi-*zhe* ma zhao ma (Smith, 1997)
he ride-*zhe* horse seek horse

'He is looking for a horse while riding a horse (do something absent-mindedly.)'

b. Ta chi-*zhe* fan kanbao (Chan, 1980)
he eat-*zhe* rice read newspaper
'He is reading the paper while eating.'

According to Smith (1997), *-zhe* in (10a) appears in the subordinate clause, and its main function is to present a background effect. In this case, the aspectual marker *-zhe* is used in the subordinate clause and can be freely attached to 'the horseback riding event,' an event denoting an Activity. Similarly, Chan (1980) argues that *-zhe* marks the simultaneity of an action, such as the eating event in (10b), with respect to the main event. The duration of the action must extend at least to include the time required to fulfill the main event. Note that the sentences in (10) differ from the one in (7) in that the SFP *ne* is not required. I account for this difference in Section 3.

It has also been argued that *-zhe* is compatible with stative events. For example, Yeh (1993) and Smith (1997) both argue that *-zhe* is compatible with stative events, but generally limited to stage-level states (SLS) only. Observe the two examples in (11):

(11) a. Lisigaoxing-*zhe* ne
Lis happy-*zhe* SFP
'Lisi is quite happy.'

b. *Lisizhidao-*zhe* nageda'an ne
Lisi know-*zhe* that CL answer SFP
'*Lisi is knowing that answer.'

The marker *-zhe* in (11a) co-occurs with the stage-level stative event *gaoxing* 'to be happy' but is incompatible with an individual-level state such as *zhidao* 'to know' in (11b). Yeh (1993) argues that stage-level states are more likely to change and they can therefore take *-zhe*. Similarly, Smith (1997) claims that the main function of *-zhe* is to present a continuous and stable situation without regard to the initial or end point.

Li and Thompson (1981) also indicate that *-zhe* can be used to modify a stative event. However, they claim that, *-zhe* is used as an intensifier together with the sentence-final particle *ne* in a sentence such as (11a). Like the sentence in (7), the SFP *ne* is needed when *-zhe* is used to modify a stative event, as shown by (11a); without the particle, the sentence sounds incomplete. Reaching a similar conclusion, He (1992) also argues that the function of *-zhe* is to intensify the degree of a stative event. Therefore, according to He (1992), the particle in (11a) has a meaning similar to the degree adverb *hen* 'very'. Nevertheless, the idea that *-zhe* can function as an intensifier seems highly constrained. Observe the two examples in (12) below:

(12) a. *Zhangsanpang-*zhe* ne
Zhangsan fat-*zhe* SFP
'Zhangsan is pretty fat.'

b. Zhangsanhen pang
Zhangsan veryfat
'He is very fat.'

Like (11a), (12a) also contains a gradable stative event, namely, *pang* 'fat'; however, it cannot take the morpheme *-zhe*, even though the stative event is compatible with the degree adverb *hen* 'very', as demonstrated by (12b).

2.2 The Aspectual marker *-zhe* and Telic Events

The marker *-zhe* has been argued to be incompatible with a telic event such as an Achievement.³For instance, according to Xiao and McEnergy's (2004) corpus study, none of the sentences with the morpheme *-zhe* contains an Achievement, as demonstrated by the sentences in (13):

- (13) a. *Lisikan-wan-zhezhepianxiaoshuo(Xiao and McEnergy, 2004)
Lisi read-finish-zhe this CL novel
'Lisi is finishing reading the novel.'
- b. *Lisisi-zhe
Lisi die-zhe
'Lisi is dying.'
- c. *Lisidaoda-zheshanding
'Lisi reach-zhe mountain peak
'Lisi is reaching the top of the mountain.'

The sentences in (13) all contain an event denoting an Achievement; nevertheless, they are ungrammatical. The phenomenon is not surprising, as the same events also cannot be modified by the progressive *zai*. For example:

- (14) a. *Lisizaikan-wan neipianbaogao
Lisizai read-finish that CL report
'Lisi is finishing reading that report.'
- b. *Lisizaishi
Lisizai die
'Lisi is dying.'
- c. *Lisizaidaodashanding
Lisizaireach mountain peak
'Lisi is reaching the mountain peak.'

The sentences in (13) and (14) show that the Chinese imperfective viewpoint aspect does not serve the same function as a language like English, where the progressive aspect focuses on the preliminary process of an Achievement (Smith, 1997). Both the progressive marker *zai* and the aspectual marker *-zhe* may not be used to modify an event denoting an Achievement. Moreover, according to Lin (2002), *-zhe* is not compatible with the other type of telic event: an event denoting an Accomplishment. This statement can be demonstrated by (15) below:

- (15) *Lisigai-zheyi dongfangzi. (Lin, 2002)
Lisi build-zhe one CL house
'Lisi is building a house.'

As shown, the sentence in (15) cannot have the meaning that the house-building event is in progress at the reference time; it is simply ungrammatical. For an Accomplishment to have a progressive reading, the progressive *zai* must be used, as demonstrated by (16):

- (16) a. Lisizaigaiyi dongfangzi
Lisizaibuild one CL house
'Lisi is building a house.'
- b. Zhangsanzahuayigeyuan
Zhangsanzai draw one CL circle
'Zhangsan is drawing a circle.'

³ In this study, I follow Vender (1967), Dowty (1979), and Travis (2010) and assume that telic events can be further divided into different groups such as Accomplishments and Achievements. However, studies such as Verkuyl (1993) and de Swart (1998) do not distinguish the difference. For example, in de Swart's (1998) study, Accomplishments and Achievements are both called *quantized events*.

The sentences in (13) and (15) suggest that *-zhe* is incompatible with telic events. The phenomenon shows the selectional property of this aspectual marker. Also, the fact that *-zhe* and an Accomplishment are incompatible reveals an interesting property of this aspectual marker. As argued by Smith (1997), when the progressive aspect is used to modify a dynamic event (i.e., an Activity or an Accomplishment), it signals the ongoing process of the event. If the marker *-zhe* signals the progressive aspect, it is mysterious that it can only be used to modify an Activity in Chinese, especially given that these two types of eventualities are both dynamic. As a result, I take this incompatibility between the marker *-zhe* and an Accomplishment as an indication that the progressive reading of an Activity, as in the sentences in (1a) and (7) is not directly derived from *-zhe*. Instead, I will argue in Section 3 that the progressive reading is due to aspectual coercion.

2.3 The Aspectual Marker *-zhe* and Verbs of Posture and Location

As shown by sentences in (2b), *-zhe* is also compatible with verbs signaling states that are associated with their activity meanings. In this study, for the sake of simplicity, I will refer to them as 'wear-type verbs.' Other verbs that have similar properties are *dai* 'to wear', *na* 'to hold', *gua* 'to hang' and many others. In addition to wear-type verbs, verbs of posture and position can be modified by the durative *-zhe* as well (Li and Thompson, 1981). The sentences in (17) and (18) give additional examples:

- (17) a. Lisina-*zheyi* ben shu
Lisi hold-*zhe* one CL book
'Lisi is holding a book.'
- b. Lisishou li na-*zheyi* ben shu
Lisi hand inside hold-*zhe* one CL book
'Lisi is holding a book in his hand.'
- (18) a. Lisi (zaishafashang) zuo-*zhe*
Lisi on sofa above sit-*zhe*
'Lisi is sitting on the sofa.'
- b. Lisizaichuangshang tang-*zhe*
Lisi on bed above lie-*zhe*
'Lisi is lying in the bed.'

According to Smith (1997), *-zhe* in sentences such as (17) and (18) indicates continuation of a state that is the result of an action. She further claims that an event such as the book-holding event in (17a) is an Accomplishment and argues that when the morpheme *-zhe* is combined with an Accomplishment, it signals continuation of the resultant state. However, as we have discussed in Section 2.2., Lin (2002) argues against such a proposal. To explain the grammaticality of (17a), Lin claims that the sentence can be rephrased as (17b), which contains a locative inversion construction. According to Lin, locative inversion is stative, and therefore, *-zhe* may appear in a sentence such as (17b). In addition, the aspectual marker *-zhe* is compatible with verbs of posture and position as shown by (18). In this case, *-zhe* signals the ongoing posture or physical dispositions of an entity at a location.

The marker *-zhe* in both types of verbs discussed here has the same function: it expresses continuation of a state that is related to an action. For instance, the state of holding a book in (17a) is related to the action of picking up the same book. Nevertheless, the two types of verbs discussed above show some variations. While both types of verbs are compatible with the morpheme *-zhe*, only the first type can be modified by the progressive marker *zai*, as in (19):

- (19) a. *Lisi *zai* zuo
Lisi *zai* sit
'Lisi is sitting down.'
- b. Lizi (zheng) *zai* zuo-xia
Lisi right now *zai* sit-down
'Lisi is sitting down right now.'

(19a) shows that verbs of posture and position cannot be modified by progressive marker *zai*. The sentence is ungrammatical and cannot mean that Lisi is in the progress of sitting down. To save the sentence, the directional complement *xia* 'down' must be added as in (19b). This phenomenon is similar to that of English progressive aspect as demonstrated by the sentences in (20) below:

- (20) a. *John was quickly sitting.
b. John was quickly sitting down.

The sentence in (20a) suggests that when the progressive aspect in English is combined with a posture/position verb such as *sit*, it cannot have a progressive reading. The sentence cannot mean that John is in the progress of sitting down; nevertheless, when the particle *down* is added as in (20b), the sentence is grammatical, and can have a progressive meaning. However, wear-type verbs in Chinese do not have the same constraint; they can be freely modified by both *-zhe*, as demonstrated by (17a) above, and the progressive marker *zai* as shown in the sentence in (21) below:

- (21) Lisizaichuannajianwaitao
Lisizaiwear that CL coat
'Lisi is putting on that coat.'

The sentence in (21) demonstrates that the coat-wearing event is in progress; therefore, the proper English translation of the sentence is *Lisi is putting on that coat*.

3. Analyses

In this section, I provide my own analyses of the aspectual and morpho-syntactic properties of *-zhe*. I first provide the theoretical background followed by analyses of the marker in different syntactic environments.

3.1 Theoretical Background

The discussion presented in Section 2 suggests that *-zhe* is sensitive to different types of eventuality, as it is not compatible with telic events such as an Accomplishment or an Achievement. Therefore, before providing my own analyses of the function of *-zhe*, I will first review Bach's (1986) classification of different types of eventuality. According to Bach, eventualities can be grouped into two basic categories. The first category is *homogeneous eventuality*, which includes a State and an Activity; the second one is *quantized eventuality*, which includes both an Accomplishment and an Achievement.⁴ States can be further divided into static and dynamic States. Static States include phrases such as *be drunk*, *be in New York*, and *be in love*. On the other hand, dynamic States include verbs such as *sit*, *stand*, and *lie + location*. Based on Bach's study (1986), the classification of eventualities is summarized in Figure 1:

Figure 1: Classification of Eventualities

Homogeneous			Quantized	
Static State	Dynamic State	Activity	Accomplishment	Achievement
Stative	###	Dynamic		

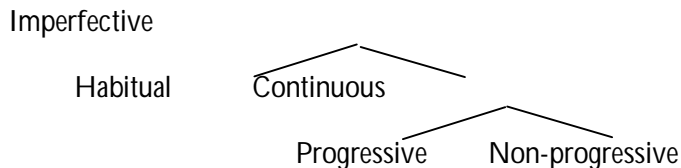
As shown by Figure 1, both dynamic and static States and Activities are homogeneous; they differ in that States are stative and Activities are dynamic. Also, Accomplishments and Achievements are quantized (i.e., telic), and like Activities, they are also dynamic. As for a dynamic State, it has properties of both stative and dynamic eventualities.⁵ For example, the state of sitting (in a chair) is a result of the action of sitting down. Also a dynamic State such as *sit* and an Accomplishment such as *sit down* both contain the feature [+V]; that is, they are both verbs. I would like to suggest that due to this special property of a dynamic State, it acts differently from other stative or dynamic eventualities when modified by aspectual operators such as *-zhe*. I will elaborate this argument in Section 3.2.

⁴ Bach (1986) uses *Progress* instead of Activity and he also uses *Events* to represent both Accomplishments and Achievements.

⁵ I use the symbol '##' to indicate that a dynamic State has properties of both a static State and a dynamic event.

I also follow Comrie (1976) and assume that the imperfective aspect can be further categorized into different sub-groups, as demonstrated by Figure 2 below:

Figure 2: Comrie's (1976) Classification of Aspectual Oppositions



According to Comrie's (1976) classification of aspectual oppositions, while many languages express imperfectivity with one single category, there are other languages where imperfectivity is subdivided into a number of different categories. Comrie argues that imperfectivity can be divided into two subgroups: *habitual* and *continuous*. He further argues that there are two types of continuous imperfective aspect: *progressive* and *non-progressive*. These different sub-categories can be morphologically realized as different elements. Take the English aspectual system for example. It uses the phrase *used to* to represent the habitual aspect, though only in the past tense, e.g., *He used to work in Boston*. However, English does not morphologically distinguish the two types of continuous aspect.

Based on the observation of the properties of *-zhe* presented in Section 2, I propose that *-zhe* has the aspectual function represented by (21) below:

(21) *The Aspectual Function of -zhe:*

The aspectual marker *-zhe* represents the non-progressive aspect, which indicates continuation of a dynamic State.

As can be seen in (21), the core function of *-zhe* is to indicate continuation of a special type of eventuality: a dynamic State. Therefore, the morpheme is naturally compatible with dynamic stative events such as *zuo* 'to sit' and *zhan* 'to stand' in (18), and is used to signal continuation of this type of eventuality. The aspectual function defined in (21) suggests that *-zhe* contains a selectional property: that is, it is only compatible with dynamic States.

The selectional property has been argued to be found in different types of aspectual operators cross-linguistically. For example, de Swart (1998) argues that English progressive aspect is naturally compatible with dynamic events such as an Activity or an Accomplishment, and when a stative event is modified by the progressive aspect, aspectual coercion is involved. According to de Swart, a sentence that contains a stative event such as *like this play* in (22a) has the grammatical structure in (22b):

- (22) a. Susan is liking this play a great deal.
 b. [PRES[PROG [C_{sd} [Susan like this play a great deal]]]]

PRES in (22b) denotes the present tense of the sentence and PROG denotes that the sentence contains the progressive aspect. The event [Susan like this play a great deal] is stative, which does not satisfy the aspectual restriction of the progressive aspect; therefore, the covert coercion marker, C_{sd}, which coerces a stative event into a dynamic one, is needed.

In the same spirit, I would like to claim that when *-zhe* is combined with events other than a dynamic State, these events must be coerced into a dynamic State before being modified by *-zhe*. In the following sub-sections, I will demonstrate how the proposal made in this section accounts for the different linguistic environments in which *-zhe* appears.

3.2 Verbs of posture/position and wear-type verbs

As proposed in Section 3.1, *-zhe* signals duration of a state. I further proposed that this aspectual marker is naturally compatible with only a dynamic State. *Zuo* 'to sit' is an example of a verb that belongs to this type of eventuality. A sentence such as (23a) therefore has the grammatical structure as spelled out in (23b):

- (23) a. Lisi (zaishafashang) zuo-zhe
 Lisi (in sofa above) sit-zhe
 'Lisi is sitting in the sofa.'
 b. [NON-PROG-*-zhe* [Lisi sit (in the sofa)]]

As shown by the structure in (23b), [Lisi sit (in the sofa)] is a dynamic State, which satisfies the aspectual restriction of *-zhe*. The morpheme is an overt realization of the non-progressive aspect. Wear-type verbs such as *chuan* 'to wear' and *na* 'to take' have similar properties, and should also be considered dynamic stative verbs, which accounts for the continuative reading of these sentences when modified by the morpheme *-zhe*. Hence, a sentence such as (24a) has the grammatical structure as in (24b):

- (24) a. Lisina-*zhe*nei ben shu
Lisi hold-*zhe* that CL book
'Lisi is holding that book.'
b. [NON-PROG-*zhe* [Lisi hold that book]]

Recall that wear-type verbs and verbs of posture/position differ in that the former can be modified by the progressive marker *zai*, while the latter cannot, as demonstrated by (2) and (3). To explain the progressive reading of (2a), we can follow studies such as Lin (2002) or Onozuka (2008) and assume that this type of verb is lexically ambiguous. The dynamic *chuan*₁ is the same as English *put on*, while stative *chuan*₂ has the same meaning as *wear* in English. The verb *chuan*₁ is dynamic and can be modified by the progressive marker *zai*; on the other hand, the verb *chuan*₂ is static and is compatible with *-zhe*.

However, I would like to provide an alternative account. Instead of claiming that wear-type verbs are sometimes ambiguous, I claim that they are always stative. I further propose the progressive reading of a sentence containing a wear-type verb is due to aspectual coercion. That is, a sentence such as (25a) has the grammatical structure as in (25b):

- (25) a. Zhangsan *zai* neibenshu
Zhangsan *zai* hold that CL book
'Zhangsan is picking up that book/Zhangsan is **taking a hold** of that book.'
b. [PROG-*zai* [C_{ds-d} [Zhangsan hold that book]]]

As demonstrated by (25b), the progressive sentence in (25a), which has a wear-type verb, in fact contains a covert coercion marker C_{ds-d}. This coercion marker turns the dynamic State [Zhangsan hold that book] into a true dynamic event, which meets the selectional restriction of the progressive *zai*. In the spirit of Manfredi (1991), I suggest that the sentence in (25a) should be translated as *Zhangsan is taking a hold of that book*. Given that the progressive reading of (25a) is involved with aspectual coercion, there is no need to assume that the verb is ambiguous. Recall also that verbs of posture and position are incompatible with the progressive aspect, unless a particle such as *xia* 'down' is added. To explain the ungrammaticality of the sentence in (3a), repeated as (26a) and the grammaticality of (19b), repeated in (26b), I argue that aspectual coercion also plays a role.

- (26) a. *Lisi *zai* zuo b. Lisi *zai* zuo-xia
Lisi *zai* sit Lisi *zai* sit-down
'Lisi is sitting down.'

As shown by (26a), the verb *zuo* 'to sit' is not compatible with the progressive *zai*; nevertheless, when the particle *xia* 'down' is added, as in (26b), the sentence becomes grammatical. I claim that the sentence in (26b) has two possible grammatical structures as demonstrated by (27):

- (27) a. [PROG-*zai* [down_{ds-d} [Lisi sit]]]
b. [PROG-*zai* [C_{ds-d} [Lisi sit]]]

The first possible structure in (27a) indicates that the particle *xia* 'down' is an overt coercion marker, which turns the dynamic State [Lisi sit] into a true dynamic event (i.e., an Accomplishment). This process then satisfies the aspectual restriction of progressive *zai*.

Under this analysis, the sentence in (26a) is ungrammatical if we assume that verbs of position and posture differ from the wear-type verbs in that they are unable to be coerced by a covert coercion marker.⁶ Only an overt marker such as the particle *xia* 'down' can coerce this type of verbs. On the other hand, the second possible grammatical structure in (27b) shows that like (25b), the sentence also contains a covert coercion marker C_{ds-d} , which turns the dynamic State into a true dynamic event. To explain the surface form of *zuo-xia* 'sit down', we can follow the Distributed Morphology (DM) analysis (e.g., Halle and Marantz, 1993) and argue that it is simply a spell-out of [sit + C_{ds-d}]. The second grammatical structure then suggests that verbs of posture/ position and wear-type verbs are similar in that they can both be coerced by the covert coercion marker C_{ds-d} .

The interaction between the progressive and non-progressive aspects in English works differently. English does not distinguish the two types of imperfective aspects, at least morphologically; it simply uses the auxiliary *be* and the present participle morpheme *-ing* to express both types. Observe the sentences in (28) below:

- (28) a. John is sitting in the chair. (non-progressive)
 b. John is sitting down in the chair. (progressive)

Although both sentences in (28) contain auxiliary *be* and the participle *-ing*, they differ in that (28a) has a non-progressive reading, whereas (28b) has a progressive one. According to Comrie (1976), both non-progressive and progressive aspects are sub-categories of the imperfective aspect. English belongs to the language group which does not morphologically distinguish these two sub-categories. Based on the analysis presented above, I claim that the sentence in (28a) has the structure in (29a), and the one in (28b) has the two possible structures in (29b) and (29b'):

- (29) a. [PRES [NON-PROG [John sit in the chair]]]
 b. [PRES [PROG [down]_{ds-d} [John sit in the chair]]]
 b'. [PRES [PROG [C_{ds-d}] [John sit in the chair]]]

As shown by the grammatical structure in (29a), I assume that like Chinese, English also contains the non-progressive aspect that indicates the continuation of a dynamic State, such as the verb *sit*. However, when a particle such as *down* is added, the whole event becomes a true dynamic event, which meets the aspectual restriction of the progressive aspect. On the other hand, I assume that both (29b) and (29b') are possible structures for (28b). First, in (29b), the particle *down* is an overt coercion marker that coerces the dynamic State [John sit in the chair]. In contrast, in (29b') there is a covert coercion marker that has the same coercive function; the surface form *sitting down* is a spell-out of the verb *sit* and the covert coercion marker C_{ds-d} .

Note that for some English speakers, the sentence in (28a) is ambiguous. For instance, Smith (1997) indicates that the sentence allows both progressive and non-progressive readings. Based on the proposal made in this study, I argue that it is possible for these speakers to have a spell-out of [sit + C_{ds-d}] as *sit* instead of *sit down*. This suggests that in English, verbs of posture/position can be coerced by a covert aspectual coercion marker. Assuming the existence of the coercion marker C_{ds-d} is a cross-linguistic phenomenon, we can then conclude that the verb phrase *zuo-xia* 'sit down' in Chinese and *sit down* in English are the spell-out of [sit + C_{ds-d}]. As for wear-type verbs in English, they are different from the same type of verb in Chinese in that these verbs in English have two different lexical items. Observe the sentences in (30) below:

- (30) a. John is **holding** a book. (non-progressive)
 b. John is **picking up** a book. (progressive)

As can be seen in (30) English *hold* is static and *pick up* is dynamic. This seems to support the argument that the verb *na* 'hold/pick up' in Chinese is ambiguous: one is static as English *hold* and the other is dynamic as English *pick up*. However, as argued above, this type of verb in Chinese is always stative. The dynamic reading is due to aspectual coercion. I would like to further argue that the same type of verb in English has the same property. Therefore, I propose that the sentence in (30a) has the grammatical structure in (31a) and the one in (30b) has the structure in (31b):

- (31) a. [PRES [NON-PROG [John hold a book]]] → John is holding a book.
 b. [PRES [PROG [C_{ds-d}] [John hold a book]]] → John is picking up a book.

⁶ However, as I will demonstrate later in this sub-section, some English speakers allow a covert aspectual marker that turns this type of verbs into an accomplishment.

As shown by (31a), the stative event [John hold a book] is naturally compatible with the non-progressive aspect; in contrast, when the same event is combined with the progressive aspect, it must be coerced into an Accomplishment as shown by (31b). The verb *hold* and the covert coercion marker $C_{ds-dare}$ spelled out as *pick up* in English. This analysis then provides a unified account for the progressive and non-progressive readings of verbs of posture/position and the wear-type verbs in Chinese and English.

3.3 Atelic Events and Aspectual Coercion

According to Lin (2002), the aspectual marker *-zhe* is compatible with only atelic events. However, diverging from Lin, I have argued that only dynamic States meet the aspectual restriction of the non-progressive aspect signaled by *-zhe*. To explain the progressive reading of a sentence containing *-zhe* and an Activity, and the intensifying reading of a sentence with *-zhe* and a static State, I argue that these readings are due to aspectual coercion. Therefore, a sentence that contains an Activity such as (32a) has the grammatical structure described in (32b):

- (32) a. Lisichang-*zhe*gene
Lisi sing-zhesong SFP
'Lisi is singing.'
- b. [NON-PROG-*zhe* [C_{a-ds} [Lisi sing]]]

The structure in (32b) demonstrates that there is a covert coercion marker C_{a-ds} , which is different from what was seen in Section 3.2. This coercion marker turns an Activity into a dynamic State, meeting the aspectual restriction of *-zhe*. Recall that although a sentence such as (32a) has a progressive reading, it differs from a *zai*-progressive sentence in that this type of progressive is used to present an event lasting over an interval that is longer than one instant. I argue that this special progressive reading is due to the coercion process. According to Smith (1997), there are several specific connotations related to a stative event with the progressive aspect. For example, in a sentence such as *John was really liking the play*, the progressive aspect indicates the temporary duration of the *liking* event and that this event has an emotional color that is lacking in the neutral presentations of the stative event. Smith further indicates that when a stative event takes the progressive aspect, it is a type of marked aspectual choice.

In the same spirit, I argue that when an Activity such as *chang-ge* 'sing' in (32a) is modified by *-zhe*, it is a marked aspectual choice; therefore, there exists a connotation in this marked choice. I further argue that the specific connotation is that the dynamic event modified by *-zhe* lasts more than one instant. This argument accounts for the two different progressive readings contributed by *zai* and *-zhe* discussed by Wu (2004) as shown by the sentences in (8).

In addition to an Activity, *-zhe* can also be used to modify a static State; however, I argue that like an Activity, a static State can also be coerced into a dynamic State before it is modified by *-zhe*. Therefore, a sentence such as (33a) has the grammatical structure as in (33b):

- (33) a. Zhegefangjianhei-*zhe* ne
This CL room black-zhe ne
'This room is pretty dark.'
- b. [NON-PROG-*zhe* [C_{ss-ds} [The room is dark]]]

As seen in (33b), the coercion marker C_{ss-ds} coerced the static State into a dynamic State. This process meets the aspectual selectional property of the morpheme *-zhe*. Like an Activity, when a static State is modified by *-zhe*, it is also a marked aspectual choice. The connotation regarding this marked choice is the intensifying reading. To be more specific, the coercion marker C_{ss-ds} coerces a static State to denote a range of possible values beyond the focal one; hence, we have "black" to "dark" as a result of the coercion process. Note that there exists some constraint to this coercion process. The coercion marker C_{ss-ds} basically can coerce only a stage-level State; therefore, the sentence in (34) is ungrammatical and does not have the intended reading:

- (34) *Lisizhidao-*zhe*najianshi
Lisi know-zhe that CL matter
Intended reading: 'Lisi has a fairly good but not perfect idea of that matter.'

As we have seen, the two sentences in (32a) and (33a) are similar in that they both contain a coercion marker that turns an eventuality into a dynamic State. The two sentences are also similar in that they include the SFP *ne*, which is required in both sentences. According to Tsai (2008), a *zhe*-sentence with an Activity verb such as *chi* 'eat', shown in (35a) sounds incomplete if not ungrammatical. To save this sentence, Tsai argues that there must be some overt operators such as the coordinate construction in (35b) and the adverb of quantification in (35c):

- (35) a. %Lisi chi-*zhe* fan⁷
Lisi eat-*zhe* rice
b. Lisi chi-*zhe*fan kandiashi
Lisi eat-*zhe* rice watch TV
'Lisi is watching TV while eating.'
c. Lisiyizhi chi-*zhe* fan
Lisi constantly eat-*zhe* rice
'Lisi is constantly eating.'

Tsai (2008) further argues that the incomplete effect of the sentence in (35a) results from a failure to implement tense anchoring in the syntactic sense. According to Tsai, the sentences in (35b) and (35c) do not have this incomplete effect due to the fact that the coordinate construction and the adverb of quantification (i.e., *yizhi*; 'constantly') can delete the incompleteness. In his study, Tsai (2008) does not specifically discuss the function of the particle *ne*; however, based on his arguments, I suggest that *ne* is similar to the linguistic elements discussed in his paper, which also reveals the event variable. In other words, *ne* anchors the tense of a sentence (2004, Legendre et al). I would like to further argue that the SFP *ne* in (33a) and other overt operators such as the adverb of quantification in (35c) are a by-product of the coercion process in which a specific eventuality is coerced into a dynamic State. In other words, the SFP *ne* and the overt operators are the elements that indicate the coercion process from an Activity (or a static State) to a dynamic State. After an Activity or a static State is coerced into a dynamic State, it must contain some elements which anchors the tense. The operators discussed by Tsai (2008) and the SFP *ne* fulfill this requirement. The argument presented above then explains why sentences such as (23a) and (24a), which do not contain the coercion markers C_{ss-ds} or C_{a-ds} have no need for any overt operators or the SFP *ne*. It also explains why a sentence such as (25a), which is also involved with a coercion process, does not need the SFP *ne*, given that this sentence contains a different type of coercion marker. The sentences in (36), which also contain stative predicate *hei* 'black', further support the argument presented above:

- (36) a. Zhegefangjianzuotianyoudianrhei (past)
this CL room yesterday a bit black
'This room was a bit dark yesterday.'
b. Zhegefangjianjintianyoudianrhei (present)
this CL room today a bit black
'This room is a bit dark today.'
c. Zhegefangjianmingtian hui youdianrhei (future)
this CL room tomorrow will a bit black
'This room will be a bit dark tomorrow.'

The sentences in (36) all contain the static State *hei* 'black' and the stative event appears in different temporal situations. As can be seen, unlike the sentence in (33a), which has the same predicate, none of the sentences in (36) contain an overt tense morpheme or particle. The only overt elements that signal the tense are a temporal adverbial such as *zuotian* 'yesterday' in (36a) and the modal *hui* 'will' in (36c). Given that these sentences are not involved with the coercion process from a static state or an activity to a dynamic state, the SFP *ne* is not required. The discussion presented above suggests that aspectual coercion is not only a semantic process, it is also a morph-syntactic one.

3.4 Telic Events

In this sub-section I discuss the incompatibility of *-zhe* and a telic event. As discussed in Section 2, *-zhe* cannot be used to modify atelic event such as an Accomplishment or an Achievement. To account for this phenomenon, we can simply assume that a language such as Chinese does not have any coercion markers that can directly coerce a telic event into a dynamic State.

⁷ The symbol '%' indicates that the sentence sounds incomplete.

In order for a telic event to be coerced into a dynamic State, it must first be turned into an Activity. The aspectual coercion procedure of a sentence such as (37a) can be represented by (37b):

- (37) a. *Lisigai-*zheyi* dongfangzi.
Lisi build-zheone CL house
'Lisi is building a house.'
- b. Accomplishment → Activity → Dynamic State

As shown by (37b), an Accomplishment must first be coerced into an Activity before it can be further turned into a dynamic State; that is, the inherited end-point of the telic event must first be 'stripped-off' before it can be further coerced into a dynamic State. Observe the English sentences in (38), where a telic event is coerced into an activity:

- (38) a. Jim played the sonata in 5 minutes. (telic)
b. Jim played the sonata for 30 minutes. (atelic)

The sentence in (38a) has a telic reading in which the whole sonata was completed within five minutes. However, the sentence in (38b) has an atelic reading. The sonata was played over and over for thirty minutes. According to de Swart (1998), the telic event [Jim play the sonata] in (38b) must be coerced into an atelic one by a covert coercion marker to meet the aspectual restriction of the adverbial *for X minutes*. The same coercion marker can be observed in Chinese as well as shown by (39):

- (39) a. Lisixie-le nafengxin, ranhoujichu-qu (telic)
Lisi write-PRF that CL letter, then mail exit-go
'Lisi wrote that letter and then mailed it off.'
- b. Lisixie-le nafengxin, keshimeixie-wan (atelic)
Lisi write-PRF that CL letter, but not write-finish
'Lisi wrote that letter but did not finish writing it.'

The main clause in (39a), which contains the perfective *-le*, has a telic reading in which the letter-writing is completed. However, according to Tai (1984), the same event may have an atelic reading, as demonstrated by (39b). To explain the atelic reading of (39b), we can follow de Swart (1988) and assume that like English, Chinese also has a covert coercion marker that coerces the telic event [Lisi write that letter] into an Activity.

The next step of the coercion process in (37) is for the coerced Activity to be further turned into a dynamic State by the covert coercion marker C_{a-ds} discussed in Section 3.2. The whole process can be represented by (40):

- (40) [NON-PROG-*zhe* [C_{a-ds} [C_{t-a} [Accomplishment]]]]

As can be seen from (40), for an Accomplishment to be turned into a dynamic State, which meets the aspectual restriction of the non-progressive *-zhe*, two covert coercion markers are involved. First, C_{t-a} strips off the endpoint of an Accomplishment. Then the coercion marker C_{a-ds} coerces the Activity to a dynamic State. To explain why a telic event is not compatible with the non-progressive aspect represented by *-zhe*, I follow Travis (2010) and assume that covert coercion markers are syntactically projected inside vP. Based on Travis' proposal, I argue that morpho-syntactically, two consecutive null morphemes are not allowed; therefore, a telic event cannot take the non-progressive aspect given that it contains two consecutive null coercion markers: C_{t-a} and C_{a-ds} , respectively. Pragmatically, we can follow de Swart (1998) and assume that "[c]oercion ... is an implicit, contextually governed process of reinterpretation which comes into play whenever there is a conflict between the aspectual nature of the eventuality description and the input condition of some aspectual operator" (p. 349). In a context in which two different coercion processes like (40) are involved, it is too complex to be processed, contextually; therefore, a telic event cannot be modified by the non-progressive aspect.

However, given that the coercion process also involves with two steps, it must then be accounted for why a wear-type verb such as *chuan* 'to wear' can be coerced into an Accomplishment and take the *zai*-progressive (e.g., *Lisizaichuandayizai*; 'Lisi is putting on a coat').

In this case, the dynamic State must first be coerced into an Activity and then into an Accomplishment. I argue that this is due to the special property that a dynamic State contains. Recall that in Figure 1, I claimed that a dynamic State shares several similar properties as a true dynamic event. For example, they both contain the feature [+V]; that is, they are both verbs. It is because of this special property which allows a dynamic State to be coerced into an Accomplishment.

3.5 The Morphosyntactic Distribution of *-zhe*

In this section, I give an analysis of the syntactic derivation of *-zhe*. As discussed, the two imperfective particles in Chinese not only show some semantic differences, but also syntactic ones. The progressive marker *zai* must appear before the verb it modifies, whereas *-zhe* functions as a suffix that must appear immediately after the verb modified by the marker.

As I have argued, *-zhe* represents the non-progressive aspect. It is then plausible to assume that this marker is base-generated in the head of the Outer Aspect Phrase (according to Ritter and Rosen's (2005) and Travis' (2010), syntactic analyses of the perfective and imperfective aspects). However, based on the word order between manner adverbs and the form [verb + aspectual particle], according to Huang, Li & Li (2009), this assumption is wrong. Observe the sentences in (41) below:

- (41) a. Zhangsandashengdechang-zhenashougene
Zhangsan loudly sing-zhe that CL song SFP
'Zhangsan is loudly singing a song.'
- b. *Zhangsanchang-zhedashengdenashougene
Zhangsan sing-zhe loudly that CL song SFP

The two sentences in (41) show that the cluster [verb + *-zhe*] can only appear after manner adverbs. According to Tang (1990, 2001), manner adverbs can only adjoin to vP in Chinese. The sentence in (41b) shows that main verbs do not move out of vP. This seems to suggest that the morpheme *-zhe* is not base-generated in the head of the Aspect Phrase above vP. To solve the problem, Huang, Li and Li (2009) argue that the cluster [verb + *-zhe*] is formed with a word-formation rule independent of syntax. That is, the formation of this verb cluster is not due to any syntactic movement. What is required is the syntactic context in which the verb cluster occurs, which guarantees a match between the aspectual information and the aspectual particle. They further argue that the matching relation between the suffix and Aspect is built upon a *Logical Form* (LF) movement. After the verb cluster overtly moves from V to v, it covertly moves to Asp at LF to match with the aspectual information Asp carries.

Huang, Li and Li's analysis (2009) nicely explains the different distributions of the marker *-zhe*. However, this pure-checking approach allows possible un-matched features that may be not detected until they are at the LF (Adger, 2003). Therefore, I would like to posit an alternative account. I argue that *-zhe* is like English present participle *-ing*, which also functions as a verbal suffix signaling aspectual information. (42a) and (42b) roughly represent the syntactic structure of the non-progressive aspect:

- (42) a. ...[AspP \emptyset _[NON-PROG] [VPv-zhe]...]
b. *Weak Agreement*:
[Asp_[NON-PROG] ... v_[uF: non-progressive]] → pronounced as [v-zhe]

In (42a), the structure contains an aspectual phrase having the feature [-progressive], which is projected above the little v, which contains an uninterpretable feature related to aspect. This uninterpretable feature is assigned a value by Asp with the feature [-progressive]. The non-progressive aspect is weak on v, therefore, v stays in its merged position. The marker *-zhe* is a realization of *aspect hopping*. Finally, the spell-out rule will ensure the proper pronunciation as demonstrated by the agreement relation in (42b).

4. Conclusions

In this study I have demonstrated that *-zhe* is a realization of the non-progressive aspect in Chinese. This account suggests that Chinese belongs to the language group which morphologically distinguishes the two types of continuous aspect proposed by Comrie (1976). It uses the particle *zai* to signal the progressive aspect and *-zhe* to signal the non-progressive aspect.

Like other types of aspect, the non-progressive *-zhe* also contains aspectual restrictions. It is naturally compatible with a dynamic State and is used to signal continuation of this type of eventuality. When the aspectual morpheme is combined with an eventuality other than dynamic States, aspectual coercion must be involved. Accordingly, I have shown that the progressive reading of an Activity with *-zhe* is due to aspectual coercion. Given that aspectual coercion sometimes contains special connotations, the semantic differences between the *-zhe* progressive and the *zai* progressive observed by Wu (2004) are accounted for. In addition to the semantic connotations, I have argued that aspectual coercion is demonstrated by morpho-syntactic items in Chinese. Consequently, when an Activity or a static State is modified by the morpheme *-zhe*, linguistic items such as the sentence final particle *ne* or an adverb of quantification must be added. This argument further supports Travis' (2010) claim that aspectual coercion can be observed in the syntax.

Finally, in this study, I demonstrated that *-zhe* is like English present participle morpheme *-ing*, which also functions as a verbal suffix signaling aspectual information.

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