

## L2 Acquisition of *Zhe* in Mandarin Chinese: A Corpus Study\*

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This paper examines the semantic and syntactic properties of the aspect marker *-zhe* in Mandarin Chinese as well as L2 adult learners' acquisition of *-zhe* using data from the Academia Sinica corpus and a learner corpus compiled by the Mandarin Training Center at National Taiwan Normal University. *-Zhe* sentences were categorized into three major patterns — *V-zhe*, *V<sub>1</sub>-zhe-V<sub>2</sub>*, and *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>*, with each further divided into sub-types. Major findings were: (a) Usage of the various types of *-zhe* produced by the highest proficiency level learners in the corpus was closest to that of native speakers'. (b) The rate of *V-zhe* occurrence increased with the learners' proficiency level. (c) The rate of *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>* occurrence decreased with the learners' proficiency level. Error analysis revealed additional insights. These findings suggest that L2 teaching of Mandarin must take the various patterns of *-zhe* and the semantic and syntactic properties of the verbs occurring with *-zhe* into consideration.

Key words: aspect marker *-zhe*, L2 acquisition, learner corpus, Mandarin Chinese

### 1. Introduction

Mandarin Chinese lacks tense morphemes but is rich in aspect markers. *-Zhe* is one of the most frequently used aspect markers and may have more than one counterpart in other languages. For example, *-zhe* has various translations in Japanese, such as *teiru*, *te*, *tearu*, *teita* and *nagara* (Seio 2009), and may sometimes correspond to the English progressive form, as in (1a), or denote durative resultant states at other times, as in (1b).

- (1) a. Qiche    zai    gonglu    shang    feiben-zhe.  
      car    on    street    on    gallop-ZHE<sup>1</sup>  
      ‘Cars are galloping on the street.’ (Lin 2002:258)

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<sup>1</sup> Abbreviations used in this paper: ZHE= *-zhe*; GEN= genitive; PROG= progressive; PART= particle; LE= perfective/inchoative particle; JIU= adverbial conjunction, roughly equal to ‘and then’; CL= classifier; DE= genitive/complementizer/manner adverb marker.

- b. Cai    zai    zhuozi    shang    bai-zhe.  
 dish    on    table    on    place-ZHE  
 ‘The dishes are placed on the table.’ (Lin 2002:258)

In addition, *-zhe* may occur in three different patterns. It may appear after a verb (the *V-zhe* pattern), between two verbs (the *V<sub>1</sub>-zhe-V<sub>2</sub>* pattern), or occur in the reduplication pattern *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>*. These various patterns and meanings of *-zhe* and the cross-linguistic differences may cause difficulties in learning Mandarin as a second or foreign language. Hence, this study aims to examine L2 adult learners’ acquisition of *-zhe* in Mandarin Chinese from both syntactic and semantic perspectives, using data from a corpus consisting of online written tests of different genres administered by the Mandarin Training Center at National Taiwan Normal University. Comparison between L2 learners’ acquisition of *-zhe* and L1 speakers’ usage is also made, errors produced by L2 learners are analyzed, and some L2 learners’ first languages are examined as well in order to shed some light on teaching and learning Mandarin as a second or foreign language.

This paper is organized as follows. The relevant literature is reviewed and the different patterns, aspectual meanings and characteristics of *-zhe* are discussed in Section 2. The background information of the corpus and a preliminary analysis of the data are given in Section 3 together with our framework of analysis. Section 4 presents the analysis and results, followed by a discussion of the error cases in Section 5. The role of the learner’s L1 is examined in Section 6 and the pedagogical implications and concluding remarks of this study are given in Section 7.

## 2. Aspectual meanings and characteristics of *-zhe*

Various aspectual meanings of *-zhe* have been discussed in the literature. It has been suggested that *-zhe* is a progressive affix (e.g. Chao 1968, Comrie 1976). Li & Thompson (1981), on the other hand, focus on its durative nature and consider it a durative aspect marker. Zhang (2008), following Smith (1991, 1997), takes *-zhe* to be a resultative stative marker. Sybesma (1997:248) also suggests that *-zhe* is resultative in the sense that it “stativizes the event; it halts the action and indicates that the resulting state remains.”<sup>2</sup> In general, *-zhe* is considered to be an aspect marker of imperfectivity, marking a progressive event, or the continuation of an activity, a state or a resultant state.

<sup>2</sup> Sybesma (1997) posits that *-zhe* in this usage is similar to *-le*.

In addition to its various aspectual meanings, *-zhe* may appear in three different patterns. It may occur after a verb, as shown in the *V-zhe* pattern in (2); it may appear between two verbs, as in the *V<sub>1</sub>-zhe-V<sub>2</sub>* pattern in (3); and it may occur in the reduplication pattern *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>*, as illustrated in (4).

- (2) Ta zheng pansuan-zhe tuoshen zhi ji.  
 he right.now think-ZHE escape GEN plan  
 ‘He was thinking of a plan to escape.’ (Xiao & McEnergy 2004:183)
- (3) Na haizi ku-zhe yao baba.  
 that child cry-ZHE want dad  
 ‘While crying, that child called out for her father.’ (Xiao & McEnergy 2004:183)
- (4) Ta shuo-zhe-shuo-zhe jiu ku qilai le.  
 he talk-ZHE-talk-ZHE JIU cry up LE  
 ‘He talked and talked and then started crying.’ (constructed example)

Although *V-zhe* in (2) is progressive, the *V<sub>1</sub>-zhe-V<sub>2</sub>* pattern in (3) gives a durative reading and when *V-zhe* is repeated twice as in (4), only the progressive reading is allowed. Other aspectual meanings associated with these three patterns may be found depending on the type of verb co-occurring with *-zhe*. In the following subsections, the various aspectual meanings associated with each of the three patterns are discussed in detail.

## 2.1 *V-zhe*

In the literature, the *V-zhe* pattern is found to have three aspectual meanings, namely progressive, durative and inchoative, depending on the verb *-zhe* occurs with and the environment the pattern occurs in. These three meanings are discussed below.

*-Zhe* in the *V-zhe* pattern may serve as a progressive aspect marker, as in (5). According to Lü (1980:594, 1999:665-6), the progressive markers *zheng*, *zhengzai*, and *zai* and/or the sentential final particle *ne* must appear in this type of sentence.<sup>3</sup> Without one of these elements, *-zhe* sentences seem incomplete, as shown in (6a) vs. (6b). *Zai* in (6a) is a preposition. It has the same form as the progressive marker *zai* and thus only one form is pronounced. Without the prepositional phrase *zai fangjian li* ‘in the room’, the sentence sounds unfinished, as in (6b).

<sup>3</sup> Qian (2000) argues that the progressive meaning in sentences like (5) in fact results from *-zhe*’s occurrence with the progressive markers *zheng*, *zhengzai*, and *zai*, and not from *-zhe* itself; that is, *-zhe* does not have the progressive aspectual meaning.

- (5) Xue zheng xia-zhe ne.  
 snow right fall-ZHE PART  
 ‘Snow is falling.’ (Lü 1980:594, 1999:666)
- (6) a. Ta zai fangjian li ting-zhe yinyue.  
 he at room in listen-ZHE music  
 ‘He is listening to the music in the room.’ (constructed example)
- b.?Ta ting-zhe yinyue.  
 he listen-ZHE music

Precisely because of the unacceptability of sentences like (6b), Chu (1987) and Chu & Chi (1999) argue that *-zhe*’s primary function is to subordinate a clause. Yu & Ueda (1999) also suggest that simultaneity (*tongshi lü*) is one of the characteristics of *-zhe* sentences; that is, the event denoted by V-*zhe* must co-occur with another event.

Additionally, *-zhe* may be used with verbs or adjectives to indicate the continuation of a state, as in (7a). According to Lü (1980:594, 1999:666), the sentence final particle *ne*, but not the progressive makers *zheng*, *zhengzai*, and *zai*, may appear in this type of sentence. Like the examples above, without the sentence final particle *ne*, (7a) would not be complete, as shown in (7b).<sup>4</sup> Simultaneity applies to this type, too. If another event is added, (7b) becomes acceptable, as in (7c).

- (7) a. Men kai-zhe ne.  
 door open-ZHE PART  
 ‘The door is open.’ (Lü 1980:594, 1999:666)
- b.?Men kai-zhe.  
 door open-ZHE
- c. Men kai-zhe, ni suishi keyi zou.  
 door open-ZHE you any.time can leave  
 ‘The door is open now; you can leave any time.’ (constructed example)

Generally speaking, the distinction between the progressive and the durative *-zhe* can be made by other markers that it occurs with.

In addition to marking the progressive and durative aspect, *-zhe* may mark the

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<sup>4</sup>As noted in Li & Thompson (1981:222) and Lü (1980:595, 1999:667), when *-zhe* follows an adjective, it, together with the sentence-final particle *-ne*, may function as an intensifier, as in (i). This *-zhe* is distinct from the *-zhe* with a durative function. According to Li & Thompson, this usage only appears in some northern dialects of Mandarin. It is not included in the current study since it was not found in our data.

(i) Na-ge fangjian hei-zhe ne!  
 that-CL room dark-ZHE PART  
 ‘The room is pretty dark.’ (Li & Thompson 1981:222)

inchoative aspect when appearing in imperative sentences such as (8) (Sun 1997:140, 1998:156).<sup>5</sup> In (8), *-zhe* indicates the beginning of the listening event. But note that the inchoative aspect is restricted to the imperative use. As illustrated in (9), an inchoative reading is not possible in a non-imperative sentence.

(8) Ni ting-zhe!

you listen-ZHE

‘(You) listen!’

(9)\*Ta xiang ting-zhe.

he think listen-ZHE

Not all kinds of verb can co-occur with *-zhe*. Zhang (1996) observes that the situation denoted by the verb co-occurring with *-zhe* always goes on in a homogeneous way without any change. Lin (2002) elaborates Zhang’s observation and proposes that *-zhe* selects an atelic situation as its complement. Yeh (1993:86) suggests that only stage-level predicates can occur with *-zhe* while individual-level predicates cannot. Yu & Ueda (1999) divides the verbs that may co-occur with *-zhe* into two types. Verbs of the first type denote dynamic situations (or events) without a resultant state and, when appearing with *-zhe*, indicate continuous actions. Verbs such as *xiao* ‘laugh’, *chang* ‘sing’, *ku* ‘cry’, *han* ‘shout’, *yaohuang* ‘shake’ and *shenwen* ‘interrogate’ are of this type. These verbs cannot appear in locative inversion sentences.<sup>6</sup> Verbs of the second type are divided into two subtypes. Verbs of the first subtype are like those of the first type, denoting dynamic continuous situations when the agent precedes *V-zhe*, but when these verbs occur in locative inversion sentences, they denote the continuation of the resultant state, e.g. (10a) vs. (10b). *Xie* ‘write’, *chuan* ‘wear’, *dai* ‘wear’, *bao* ‘wrap’, and *kun* ‘tie’ are verbs of this subtype. (10a) expresses an ongoing event while (10b) indicates the resultant state of writing.

(10) a. Ta zai wu li xie-zhe xin.

he in house in write-ZHE letter

‘He is writing a letter in the house.’ (constructed example)

<sup>5</sup> Sun (1997:140, 1998:156) posits that *-zhe* may mark the perfect aspect, as in (i). But this usage does not appear in our dialect, Mandarin spoken in Taiwan. Therefore, it is not discussed in this paper.

(i) Zhe-ge cha, ni he-zhe zenmeyang?

this-CL tea you drink-ZHE how

‘You have drunk this tea, how is it?’

<sup>6</sup> *-Zhe* may occur in locative inversion sentences, in which the locative phrase appears before the verb phrase, and indicates existential status, as in (i).

(i) Huangshan shang chuli-zhe yi-zuo gulao de diaolou.

barren.hill on stand-ZHE one-CL ancient DE carve.building

‘On the barren hill stands an ancient carved building.’ (Xiao & McEnery 2004:184)

- b. Xin      shang      xie- zhe      yi-shou      shi.  
 letter    on            write-ZHE    one-CL      poem  
 ‘The letter has a poem in it.’ (Yu & Ueda 1999:160)

Verbs of the second subtype are posture and position verbs. These verbs have a resultant state and can appear in locative inversion sentences. Verbs like *zuo* ‘sit’, *zhan* ‘stand’, *na* ‘take’, *bao* ‘hold’, *peng* ‘hold’, etc. are of this subtype, as shown in (11a) and (11b).

- (11) a. Xiaowang    peng-zhe    wan.  
 Xiaowang    hold-ZHE    bowl  
 ‘Xiaowang is holding a bowl.’ (Yu & Ueda 1999:160)
- b. Shou-shang    na-zhe      yi-ge      wan  
 hand-on        hold-ZHE    one-CL    bowl  
 ‘(Someone’s) holding a bowl on his hand.’ (constructed example)

The distinction between the progressive and durative aspect of *-zhe* may also be determined by dynamicity. With such a distinction, examples such as (5), (6a) and (10a) denote dynamic situations and (10b), (11a) and (11b) describe non-dynamic or somewhat stative situations because the posture or position or state in the latter can maintain or continue without change. Most but not all verbs that are used to describe non-dynamic situations can appear in the locative inversion form. For example, stative verbs such as *ai-zhe* ‘love-ZHE’ cannot appear in the locative inversion form.

## 2.2 V<sub>1</sub>-*zhe*-V<sub>2</sub>

The V<sub>1</sub>-*zhe*-V<sub>2</sub> pattern is considered to be a type of serial verb construction (e.g. Chao 1968, Lü 1980, 1999, Liu 2010). Four semantic relationships between the two verbs are found and discussed below.

### 2.2.1 [[Adjunct V<sub>1</sub>-*zhe*] V<sub>2</sub>]

As noticed by Chao (1968:249), Lü (1980:594-5, 1999:666) and Zhu (1982:163), among others, V<sub>1</sub> in the V<sub>1</sub>-*zhe*-V<sub>2</sub> construction may express the manner of doing the action denoted by the second verb, such as in *zuo-zhe dushu* ‘sit-ZHE read: read while sitting down’ and *qi-zhe ma zhao ma* ‘ride-ZHE horse look-for horse: (literally) looking for a horse while riding a horse, i.e. looking for a job while holding onto another job.’ Xiao & McEnery (2004:183) suggest that, in the V<sub>1</sub>-*zhe*-V<sub>2</sub> con-

struction,<sup>7</sup> the action denoted by  $V_1$  overlaps with the action denoted by  $V_2$  and serves as background information to the action denoted by  $V_2$ . In other words, the first verb in this type is subordinated to the second verb (Chao 1968:249, Sun 1998:154), an analysis consistent with Chu's (1987) and Chu & Chi's (1999) proposal that the primary function of *-zhe* is to subordinate a clause. That is,  $V_1$  in this construction is more like an adjunct while  $V_2$  is the main verb of the clause.<sup>8</sup> For example, *chuan-zhe dayi* 'wear-ZHE overcoat' in (12a) behaves like an adjunct while *tiaowu* 'dance' is the main verb of the sentence. Besides, the event denoted by  $V_1$  must be some action that has a sustainable resulting state.  $V_1$  can be a posture verb such as *na* 'take, hold' and *zuo* 'sit', a wear verb such as *chuan* 'wear' or a facial expression verb such as *xiao* 'smile'<sup>9</sup> and *zhoumei* 'frown', but cannot be an action verb that does not denote a sustainable resulting state, such as *chang* 'sing' and *shuo* 'talk', as shown in (12b).<sup>10,11</sup> Neither  $V_1$  nor  $V_2$  can be a stative or psych verb, as shown in (12c) and (12d), respectively.

<sup>7</sup> This is the only semantic relationship between the two verbs in  $V_1$ -*zhe*- $V_2$  type considered in Xiao & McEnergy (2004).

<sup>8</sup> According to Law (1996:4), there are two types of serial verb construction:

- (i) NP<sub>1</sub> [VP V<sub>1</sub> NP<sub>2</sub> [VP V<sub>2</sub>]]
- (ii) NP<sub>1</sub> [VP [VP V<sub>1</sub> NP<sub>2</sub>] [VP V<sub>2</sub> NP<sub>3</sub>]]

In (i), the first verb takes the second VP as its complement. In (ii), the first VP is an adjunct to the second verb. The structure of [[Adjunct  $V_1$ -*zhe*]  $V_2$ ] is more like Law's second type, but whether the first VP should be an adjunct to the second VP or to some other phrasal node is something left for future research.

<sup>9</sup> Note that in Section 2.1, *xiao* 'laugh' and *ku* 'cry' were considered as verbs indicating actions without a resultant state. However, these verbs can refer to actions with a sustainable resulting state when used to denote facial expressions and not the laughing or crying actions themselves.

<sup>10</sup> It seems that if  $V_1$  is *he* 'drink', e.g. (i), the sentence is more acceptable.

- (i) ?Women changchang he-zhe kafei liaotian.  
we often drink-ZHE coffee chat  
'We often chat while drinking coffee.' (constructed example)

<sup>11</sup> One of the reviewers suggests that phrases like (i) to (iv) are counterexamples to our proposal that the first verb has to denote a sustainable resulting state. To the reviewer, (i) to (iv) are acceptable but the first verbs do not denote a sustainable resulting state. However, according to our consultants' and our own judgment, (ii) and (iv) are acceptable while (i) and (iii) are marginal, like the sentence discussed in footnote 10. This is consistent with our analysis since (*shou*) *qian-zhe shou* 'holding hands' and *kan-zhe diannao yingmu* 'looking (gazing) at the computer monitor' may denote a sustainable resulting state. The state of holding hands may be maintained for a period of time and *kan* 'look' in (iv) is better interpreted as gazing at something. But *heng-zhe ge* 'humming a tune' in (i) and *chi-zhe dianxin* 'eating desserts' in (iii) may not have such a resultant state.

- (i) ?heng-zhe ge sanbu  
hum-ZHE song take.a.walk  
'humming a tune while taking a walk'
- (ii) (shou) qian-zhe shou zoulu  
hand pull-ZHE hand walk  
'walking hand in hand'
- (iii) ?chi-zhe dianxin liaotian  
eat-ZHE dessert chat  
'chatting while eating desserts'
- (iv) kan-zhe diannao yingmu shen you  
look-ZHE computer monitor spirit wander  
'looking at the monitor of the computer absent-mindedly'

- (12) a. Ta chuan-zhe dayi tiaowu.  
 he wear-ZHE overcoat dance  
 ‘He danced, wearing an overcoat.’ (Sun 1998:155).
- b.\*Women shuo-zhe hua kai-che.  
 we say-ZHE words drive-car  
 ‘We were driving while talking.’ (constructed example)
- c.\*Tamen shengqi-zhe zuo-xia.  
 they angry-ZHE sit-down  
 ‘They sat down while they were angry.’ (constructed example)
- d.\*Tamen zuo-zhe zhaoji.  
 they sit-ZHE worry  
 ‘They were worried while they were sitting.’ (constructed example)

### 2.2.2 [ $V_1$ -zhe [Adjunct $V_2$ ]]

In addition to expressing the manner of the action denoted by the second verb,  $V_1$  in the  $V_1$ -zhe- $V_2$  construction may serve as the means to achieve the purpose expressed by the second verb (e.g. Zhu 1982:164-5, Lü 1980:595, 1999:666), as shown in (13) and (14).

- (13) Zhe-wan cai liu-zhe gei baba chi.  
 this-CL dish keep-ZHE give father eat  
 ‘This dish should be reserved for Father to eat.’ (Lü 1999:666)
- (14) Zhe gutou liu-zhe wei gou.  
 This bone keep-ZHE feed dog  
 ‘Keep the bone to feed the dog.’ (constructed example)

The  $V_1$ -zhe here cannot be said to be subordinated to the second verb because the VP headed by the second verb is a purposive phrase, which, as suggested by Tang (1990:327) in discussing serial-verb construction sentences such as (15), is a purposive clause. Hence, the VP headed by  $V_2$  (e.g. *gei baba chi* in (13) and *wei gou* in (14)), like *dao xuexiao* in (15), behaves like an adjunct to  $V_1$ .

- (15) Ta zuo che dao xuexiao.  
 he take bus go school  
 ‘He went to school by bus.’ (Tang 1990:327)

### 2.2.3 [ $V_1$ -zhe [Complement $V_2$ ]]

$V_2$  in the  $V_1$ -zhe- $V_2$  pattern may also function as the complement of  $V_1$ , as in (16).



According to Law (1996:4), the first verb of a serial verb construction may take the VP headed by the second verb as its complement.

- (16) Ni yao shi-zhe wangji guoqu-de bu-yukuai.<sup>12</sup>  
 you should try-ZHE forget past-DE not-happy  
 ‘You should try to forget the unhappiness in the past.’

[V<sub>1</sub>-*zhe* [Complement V<sub>2</sub>]] is similar to [V<sub>1</sub>-*zhe* [Adjunct V<sub>2</sub>]] but different from [[Adjunct V<sub>1</sub>-*zhe*] V<sub>2</sub>] in that the action denoted by the first verb in [[Adjunct V<sub>1</sub>-*zhe*] V<sub>2</sub>] overlaps with the action denoted by the second verb, but this is not the case in the other two types. On the other hand, [V<sub>1</sub>-*zhe* [Complement V<sub>2</sub>]] is different from [V<sub>1</sub>-*zhe* [Adjunct V<sub>2</sub>]] in that the VP headed by the second verb in [V<sub>1</sub>-*zhe* [Adjunct V<sub>2</sub>]] is a purposive adjunct but the second VP in [V<sub>1</sub>-*zhe* [Complement V<sub>2</sub>]] is a complement. That is, the adjunct VP in [V<sub>1</sub>-*zhe* [Adjunct V<sub>2</sub>]] is optional while the complement VP in [V<sub>1</sub>-*zhe* [Complement V<sub>2</sub>]] is obligatory, which can be shown in (13’) vs. (16’). Example (13’) is a complete and grammatical sentence while (16’) is not.

- (13’) Zhe gutou liu-zhe.  
 this bone keep-ZHE  
 ‘Keep the bone.’  
 (16’) \*Ta yao shi-zhe.  
 he should try-ZHE

#### 2.2.4 [[V<sub>1</sub>-*zhe*][V<sub>2</sub>]]

The fourth semantic relationship found between the first and second verb of the V<sub>1</sub>-*zhe*-V<sub>2</sub> construction is that the VP headed by the second verb expresses a meaning closely related to the first verb, as in (17). In this type, the first verb is normally in the positive form and the second verb in the negative form (Liu 2010:5). Syntactically, the two verb phrases may be coordinated.

- (17) Daniang jinjinde wo-zhe wo-de shou bu fang.  
 woman tightly hold-ZHE my-DE hand NEG let.go  
 ‘The woman held my hand tightly and didn’t want to let go.’ (Liu 2010:5)

<sup>12</sup> This sentence is from: <https://www.google.com.tw/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=%22%E4%BD%A0%E8%A6%81%E8%A9%A6%E8%91%97%E5%BF%98%E8%A8%98%E9%81%8E%E5%8E%BB%E7%9A%84%E4%B8%8D%E6%84%89%E5%BF%AB%22>

### 2.3 V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>

The reduplication pattern V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub> is frequently used in spoken Mandarin and is sometimes treated as a subtype of V<sub>1</sub>-zhe-V<sub>2</sub> (e.g. Lü 1980, 1999, Xiao & McEnery 2004). For example, Xiao & McEnery (2004) treat sentences like (18) as cases of the V<sub>1</sub>-zhe-V<sub>2</sub> construction which expresses overlapping actions.

- (18) Women    liao-zhe-liao-zhe,    jiu    dao    chezhan    le.  
           we            talk-ZHE-talk-ZHE    JIU    arrive    station    LE  
           ‘We talked and talked (on our way to the station) and then we arrived at the station.’ (constructed example)

Functionally, V<sub>1</sub>-zhe-V<sub>1</sub>-zhe in the V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub> construction is similar to V<sub>1</sub>-zhe in the [[Adjunct V<sub>1</sub>-zhe] V<sub>2</sub>] pattern in that they both serve to supply background information to the event denoted by V<sub>2</sub>; however, the reduplication pattern is different from [[Adjunct V<sub>1</sub>-zhe] V<sub>2</sub>] in several respects. First, the two events denoted by V<sub>1</sub> in (18), i.e. *liao* ‘talk’, and V<sub>2</sub>, i.e. *dao chezhan* ‘arrive at the station’, may not overlap with each other, unlike what Xiao & McEnery (2004) claims; that is, in the case of (18), the speakers may or may not stop talking when arriving at the station.<sup>13</sup> Such sentences mainly convey that the two events are consecutive; when the action denoted by V<sub>1</sub> is ongoing, the event denoted by V<sub>2</sub> begins mostly unexpectedly no matter whether the action denoted by V<sub>1</sub> stops or not (e.g. Wang 1990, Sugimura 2006, Han 2010, Guo 2011) and the discourse topic is hence changed (Li 2000).

Second, the V<sub>1</sub> in the V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub> construction usually denotes an action while the VP headed by V<sub>2</sub> denotes a punctual event, a change of state or an Achievement situation. As noticed by Hou & Xu (2002) and Han (2010), most verbs that can appear in the V<sub>1</sub> position are monosyllabic<sup>14</sup> and action verbs,<sup>15</sup> and have the

<sup>13</sup> Liu, Pan & Gu (1996:212) suggest that the two events occur consecutively--one immediately after the other while Li (2000) notes that the action denoted by V<sub>1</sub> may not necessarily be stopped when the event denoted by V<sub>2</sub> begins.

<sup>14</sup> Bi-syllabic verbs are also found in the V<sub>1</sub> position (Wang 1990, Han 2010).

<sup>15</sup> Han (2010) reports that a few adjectives may appear in the V<sub>1</sub> position, as in (i). We, however, think (i) is unacceptable in our dialect, the Mandarin spoken in Taiwan.

(i) Reng-diao    hou    wo    shen-shang    qing    le    yidian,    ren    keneng    zheyang  
           throw-lose    after    I    body-on    light    LE    a.little    man    maybe    this.way  
           qing-zhe-qing-zhe            jiu            mei            you            le.  
           light-ZHE-light-ZHE            JIU            NEG            have            LE  
           ‘After throwing it away, I became lighter. I may become lighter and lighter and then completely gone.’ (Han 2010:7)

properties [+action, +durative, +iterative, +/-location change, +/-patient, -instantaneously completed] (Hou & Xu 2002:38). On the other hand, the properties of  $V_2$  are [+action, +punctual, +location change, -volitional, -controllable] (Hou & Xu 2002:39). According to Hou & Xu, verbs that frequently appear in the  $V_1$  position of the  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  construction are: (a) verbs of body movement or action, such as *zou* ‘walk’, *pao* ‘run’, *tang* ‘lie’ and *shui* ‘sleep’; (b) thinking and speech verbs such as *chang* ‘sing’, *shuo* ‘talk’, *han* ‘shout’ and *xiang* ‘think’; (c) verbs of the five senses, such as *ting* ‘hear’ and *wen* ‘smell’; (d) movement verbs, such as *na* ‘take’, *xie* ‘write’ and *yao* ‘shake’; (e) verbs describing facial actions, such as *ku* ‘cry’ and *xiao* ‘laugh’.  $V_2$  in the  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  pattern is used to describe a new state (Hou & Xu 2002). The verb often co-occurs with suffixes such as *dao* ‘arrive’, *qilai* ‘up’, *xiaqu* ‘down’, *xialai* ‘down’ and the perfective marker *le* (Han 2010:14). That is, it denotes an instantaneous event and indicates that a goal is achieved, as in (18), or a new state or action begins, as in (19).

- (19) Women    *zou-zhe-zou-zhe*        *huran*                *xia*    *qi*    *yu*    *lai*    *le*.  
       we            walk-ZHE-walk-ZHE    unexpectedly    fall    up    rain    come    LE  
       ‘It started raining unexpectedly while we were walking.’ (constructed example)

In contrast,  $V_1$ -*zhe* in [[Adjunct  $V_1$ -*zhe*]  $V_2$ ] usually denotes a continuous action or the resultant state of an action, such as *pao-zhe* in (20) and *zuo-zhe* in (21), and  $V_2$  in this pattern usually indicates an atelic action, such as *qu xuexiao* in (20) and *kanshu* in (21).

- (20) Ta    *pao-zhe*    *qu*    *xuexiao*.  
       he    run-ZHE    go    school  
       ‘He ran to school.’

- (21) Ta    *zuo-zhe*    *kanshu*.  
       he    sit-ZHE    read.book  
       ‘He read while sitting.’

$V_1$ -*zhe*- $V_1$ -*zhe* in  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  is also different from  $V_1$ -*zhe* in [[Adjunct  $V_1$ -*zhe*]  $V_2$ ] in that the latter can either denote a continuous action or the resultant state of an action while  $V_1$ -*zhe*- $V_1$ -*zhe* can only denote a continuous action, not the resultant state of an action, as shown in (22). In other words, -*zhe* is only a progressive marker in the  $V_1$ -*zhe*- $V_1$ -*zhe* pattern.

- (22) Di-shang reng-zhe(\*-reng-zhe) yidadui xie.  
 ground-on throw-ZHE-throw-ZHE a.lot shoe  
 ‘There are a lot of shoes lying on the ground.’ (Hou & Xu 2002:38)

The relationship between  $V_1$ -zhe- $V_1$ -zhe and its following VP also differs from the relationship between [Adjunct  $V_1$ -zhe] and its following VP. Some [Adjunct  $V_1$ -zhe] can stand alone, as in (23a), but  $V_1$ -zhe- $V_1$ -zhe cannot appear independently without being followed by another VP (Wang 1990, Guo 2011), as shown in (23b).

- (23) a. Tamen zai wu-li zuo-zhe.  
 they in house-in sit-ZHE  
 ‘They are sitting in the house.’  
 b.\*Women liao-zhe liao-zhe.  
 we talk-ZHE talk-ZHE  
 ‘We talked and talked.’

Moreover, the VP headed by  $V_2$  in [[Adjunct  $V_1$ -zhe]  $V_2$ ] appears directly after  $V_1$ -zhe while the VP headed by  $V_2$  in  $V_1$ -zhe- $V_1$ -zhe-(*jiu*-) $V_2$  must be preceded by an adverbial. The most commonly used adverbial conjunction is *jiu*, others being *turan* ‘suddenly’, *huran* ‘unexpectedly’, and *buzhibujuede* ‘unconsciously’ (Sugimura 2006). These adverbials indicate that while the action denoted by  $V_1$  is ongoing, the new event denoted by  $V_2$  happens unexpectedly. That is, the purpose of doing  $V_1$  is not to achieve  $V_2$ . The first action may not be directly related to the following event, but the two events must be related in some way (Sugimura 2006). Without the conjoining adverbial, the sentence would not be well-formed, as shown in (24a) (vs. (18)) and (24b) (vs. (19)); if the two events are not related in any way, the sentence would not be acceptable either, e.g. (25).

- (24) a.\*Women liao-zhe-liao-zhe, dao chezhan le.  
 we talk-ZHE-talk-ZHE arrive station LE  
 b.\*Women zou-zhe-zou-zhe xia qi yu lai le.  
 we walk-ZHE-walk-ZHE fall up rain come LE  
 (25) #Wo zai jiali shui-zhe-shui-zhe huran xia yu le.  
 I at home sleep-ZHE-sleep-ZHE unexpectedly fall rain LE  
 ‘I was at home sleeping; it rained unexpectedly.’ (constructed example)

### 3. The data and framework of analysis

In this section, we give the background information of the corpus used in this study along with a preliminary analysis of the data in 3.1 and present the framework of analysis we employed in 3.2.

#### 3.1 The data

The corpus<sup>16</sup> used by this study contains about one million characters taken from online written tests for L2 adult learners in the Mandarin Training Center at National Taiwan Normal University. The tests covered four levels according to the *Common European Framework of Reference (CEFR)* — with A2 the lowest, C1 the highest, and B1 and B2 being the levels in between. All the learner language produced for each level was collected. Within each level, the tests were graded on a scale of 5. Only the tests scoring 3 or above, i.e. the threshold for passing a given proficiency level, were analyzed.

The test for A2 students was a picture description. The questions for B1 learners consisted of letter writing (for description, suggestion, requests, and providing information), note writing (for explanation or rejection) and narratives. B2 learners had to write argumentations and narratives in addition to descriptions, suggestions, requests, and information provision; learners of the C1 level had to write argumentations.

In the corpus, 632 instances of the aspectual *-zhe* were found and in the cases of  $V_1\text{-}zhe\text{-}V_1\text{-}zhe\text{-}(jiu\text{-})V_2$ , the two occurrences of *-zhe* were considered as one.<sup>17</sup> After excluding those which were not interpretable and not graded, and those that were graded as 2.5 or below, only 387 instances were left and analyzed. 68 of the 387 instances were non-target-like and 319 were correctly used. The 387 instances were analyzed according to the patterns and sub-patterns of *-zhe* discussed in Section 2 and the analysis and results are presented in Section 4; the 68 error cases were further analyzed into different types and are presented in Section 5.

In addition, 450 instances of the aspectual *-zhe* produced by L1 speakers were randomly retrieved from Academia Sinica Balanced Corpus of Mandarin Chinese,

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<sup>16</sup> Corpus data may not be as systematic as the data collected through experiments or questionnaires. However, it is more natural and more likely to reflect the learners' language proficiency and provide a more objective view of language than the data from introspection and intuition. A corpus-based analysis can discover not only patterns of language use, but also the extent to which they are used while various elicitation experiments are artificial in one way or another (Sinclair 1997, McEnery & Wilson 2001).

<sup>17</sup> These aspectual *-zhe*'s are annotated as adverbs in the corpus.

which also consists of texts of different genres, and analyzed based on the categories of *-zhe* given in Section 2 and 3.2. They were then compared with the L2 data.

### 3.2 Framework of analysis

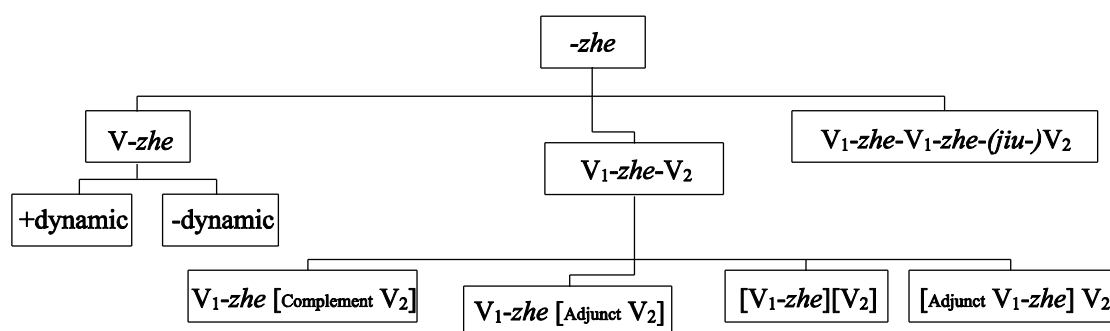
As stated in Section 2, *-zhe* sentences can be categorized into three types according to its co-occurrence patterns with the verb — *V-zhe*, *V<sub>1</sub>-zhe-V<sub>2</sub>* and *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>*.

Three aspectual meanings of the *V-zhe* pattern have been noted in the literature, namely progressive, durative and inchoative. Of the three meanings, the inchoative usage was not found in the data and the first two do not have a well-defined distinction. We have suggested that dynamicity is a better criterion for classifying the meanings of the *V-zhe* pattern and therefore, we divided the *V-zhe* sentences in our data into two types—dynamic and non-dynamic, depending on the context in which *V-zhe* occurred.

*V<sub>1</sub>-zhe-V<sub>2</sub>* were categorized into four types in Section 2 according to the relationship between the two verbs —  $[[\text{Adjunct } V_1\text{-}zhe] V_2]$ ,  $[V_1\text{-}zhe [\text{Complement } V_2]]$ ,  $[V_1\text{-}zhe [\text{Adjunct } V_2]]$ , and  $[[V_1\text{-}zhe][V_2]]$ . Our data was analyzed accordingly.

Consequently, the categories and subcategories of *-zhe* in our analysis were organized as in (26).

#### (26) Categorization of *-zhe*



### 4. Analyses and results

The L2 learners’ and the L1 speakers’ usage of *-zhe* were analyzed according to the three major patterns *V-zhe*, *V<sub>1</sub>-zhe-V<sub>2</sub>* and *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>* given in Section 3.2 and the results are presented in Table 1.

**Table 1. L1's vs. L2's usage of *-zhe***

	L1	L2				
		A2	B1	B2	C1	Total
V- <i>zhe</i>	371 (82.5%)	38 (33.6%)	110 (57.6%)	34 (56.7%)	19 (82.6%)	201 (51.9%)
V <sub>1</sub> - <i>zhe</i> -V <sub>2</sub>	78 (17.3%)	36 (31.9%)	67 (35.1%)	25 (41.6%)	4 (17.4%)	132 (34.1%)
V <sub>1</sub> - <i>zhe</i> -V <sub>1</sub> - <i>zhe</i> -( <i>jiu</i> -)V <sub>2</sub>	1 (0.2%)	39 (34.5%)	14 (7.3%)	1 (1.7%)	0 (0%)	54 (14.0%)
Total	450 (100%)	113 (100%)	191 (100%)	60 (100%)	23 (100%)	387 (100%)

Some facts are revealed in Table 1. First, the V-*zhe* pattern was the most frequently used, followed by the V<sub>1</sub>-*zhe*-V<sub>2</sub> pattern, and V<sub>1</sub>-*zhe*-V<sub>1</sub>-*zhe*-(*jiu*-)V<sub>2</sub> was the least frequently used pattern. This is perhaps because the V-*zhe* pattern is syntactically easier since only one verb is involved. Second, the C1-level L2 learners' usage of the *-zhe* patterns was closest to that of the native speakers'. This indicates that the more advanced the students were, the better their knowledge of *-zhe* was. Third, the L2 learners in the higher proficiency level used the V-*zhe* pattern more frequently than those in the lower proficiency level (A2: 33.6%, B1: 57.6%, B2: 56.7%, C1: 82.6%) while the frequency of V<sub>1</sub>-*zhe*-V<sub>1</sub>-*zhe*-(*jiu*-)V<sub>2</sub> decreased with the learners' proficiency level (A2: 34.5%, B1: 7.3%, B2: 1.7%, C1: 0%). The V<sub>1</sub>-*zhe*-V<sub>1</sub>-*zhe*-(*jiu*-)V<sub>2</sub> pattern appeared in the second volume of the textbook,<sup>18</sup> and the L2 learners in the A2 level perhaps just acquired and liked this pattern, reflecting pedagogical effects. In addition, this pattern is highly informal, and hence only one instance was found in the L1 corpus.

The distribution of the L2 learners' and L1 speakers' use of the two different V-*zhe* types, dynamic and non-dynamic, is presented in Table 2.

Table 2 shows that L1 speakers' and the L2 learners' use of the non-dynamic V-*zhe* pattern was about three times as frequent as that of the dynamic one (L1: 74.1% vs. 25.9%; L2: 75.1% vs. 24.9%). This may indicate that the L2 learners, like L1 speakers, considered that *-zhe* was a more stative-like aspect marker, perhaps reflecting Yu & Ueda's (1999) finding that historically *-zhe* appeared with verbs denoting durative and/or continuous stative situations such as *chuan* 'wear', *dai* 'wear', *bao* 'wrap', *kun* 'tie' before its occurrence with verbs denoting dynamic situations or events such as *xiao* 'laugh', *chang* 'sing', *ku* 'cry', *han* 'shout', *yaohuang* 'shake', and *shenwen* 'interrogate'. In addition, the frequency of the A2-level L2

<sup>18</sup> The textbook is *Practical Audio-Visual Chinese*, which consists of five volumes, Book 1 to Book 5.

learners' using *V-zhe* with its dynamic meaning was the highest (42.1%) and that of the C1-level learners the lowest (15.8%).<sup>19</sup> This may imply that the L2 learners considered *-zhe* as a progressive marker initially instead of a durative marker and then gradually became aware of the fact that *-zhe* is used more often as a durative marker.

**Table 2. Two *V-zhe* types: L1 vs. L2**

	L1	L2				
		A2	B1	B2	C1	Total
Dynamic	96 (25.9%)	16 (42.1%)	19 (17.3%)	11 (32.4%)	3 (15.8%)	50 (24.9%)
Non-dynamic	275 (74.1%)	22 (57.9%)	91 (82.7%)	23 (67.6%)	16 (84.2%)	151 (75.1%)
Total	371 (100%)	38 (100%)	110 (100%)	34 (100%)	19 (100%)	201 (100%)

As discussed in Section 2, the  $V_1$ -*zhe*- $V_2$  pattern can be divided into four types according to the syntactic relationship between the VP headed by  $V_1$  and that headed by  $V_2$ . Table 3 illustrates the distribution of the four  $V_1$ -*zhe*- $V_2$  types in the L1 and L2 language data.

**Table 3. Four  $V_1$ -*zhe*- $V_2$  types: L1 vs. L2**

	L1	L2				
		A2	B1	B2	C1	Total
[Adjunct $V_1$ - <i>zhe</i> ] $V_2$	54 (69.2%)	34 (94.4%)	62 (92.5%)	21 (84.0%)	2 (50.0%)	119 (90.2%)
$V_1$ - <i>zhe</i> [Complement $V_2$ ]	18 (23.1%)	1 (2.8%)	1 (1.5%)	3 (12.0%)	1 (25.0%)	6 (4.5%)
$V_1$ - <i>zhe</i> [Adjunct $V_2$ ]	5 (6.4%)	1 (2.8%)	3 (4.5%)	1 (4.0%)	1 (25.0%)	6 (4.5%)
[ $V_1$ - <i>zhe</i> ][ $V_2$ ]	1 (1.3%)	0 (0.0%)	1 (1.5%)	0 (0.0%)	0 (0.0%)	1 (0.8%)
Total	78 (100%)	36 (100%)	67 (100%)	25 (100%)	4 (100%)	132 (100%)

We can see that [[Adjunct  $V_1$ -*zhe*]  $V_2$ ] was much more often used by the L2 learners than by L1 speakers (90.2% vs. 69.2%) while more cases of [ $V_1$ -*zhe* [Complement  $V_2$ ]]

<sup>19</sup> We do not have an explanation for the fact that the B2-level learners' frequency of using the dynamic *-zhe* is higher than the B1-level learners'.



were found in the L1 data than in the L2 data (23.1% vs. 4.6%). The other two types ( $[[V_1\text{-}zhe \text{ [Adjunct } V_2]]$  and  $[[V_1\text{-}zhe][V_2]]$ ) were rarely found in either the L1 or the L2 data. The findings here seem to echo Chu (1987) and Chu & Chi's (1999) proposal that *-zhe*'s primary function is to subordinate a clause. This may also reflect a pedagogical effect because of the four  $V_1\text{-}zhe\text{-}V_2$  types, only  $[[\text{Adjunct } V_1\text{-}zhe] V_2]$  was included in the textbook.

When the L2 learners' proficiency levels are considered, it seems that the percentage of use of the  $[[\text{Adjunct } V_1\text{-}zhe]\text{-}V_2]$  pattern reduced as the learners' level increased, and that of  $[V_1\text{-}zhe \text{ [Complement } V_2]]$  and  $[V_1\text{-}zhe \text{ [Adjunct } V_2]]$  increased with the learners' proficiency level. This may imply that the L2 learners gradually learned to use the other types of the  $V_1\text{-}zhe\text{-}V_2$  pattern in spite of them not being taught in class. However, this may not be conclusive because only four instances of  $V_1\text{-}zhe\text{-}V_2$  were produced by the C1-level learners, rendering the findings not so reliable.

## 5. Error analyses

Among the 387 instances of *-zhe* analyzed, 68 were found to be non-target-like. These 68 cases are presented in Table 4 according to the learners' proficiency levels and the three *-zhe* patterns.

**Table 4. L2 non-targeted cases of *-zhe***

	L2				
	A2	B1	B2	C1	Total
<i>V-zhe</i>	5/38 <sup>20</sup> (13.2%)	9/110 (8.2%)	1/34 (2.9%)	0 (0.0%)	15/201 (7.5%)
$V_1\text{-}zhe\text{-}V_2$	18/36 (50.0%)	15/67 (22.4%)	2/25 (8.0%)	0 (0.0%)	35/132 (26.5%)
$V_1\text{-}zhe\text{-}V_1\text{-}zhe\text{-}(jiu\text{-})V_2$	12/39 (30.8%)	5/14 (35.7%)	1/1 (100%)	0 (0.0%)	18/54 (33.3%)
Total	35/113 (30.1%)	29/191 (15.2%)	4/60 (6.7%)	0/23 (0.0%)	68/387 (17.6%)

Some tendencies are revealed in Table 4. First, the error rates decreased with the learners' proficiency levels, as shown in the bottom row: A2 (30.1%) > B1 (15.2%) > B2 (6.7%) > C1 (0%). Second, as illustrated in the rightmost column, the error rate of  $V_1\text{-}zhe\text{-}V_1\text{-}zhe\text{-}(jiu\text{-})V_2$  was the highest (33.3%) of the three *-zhe* patterns, followed

<sup>20</sup> Here, 5/38 means that out of the 38 tokens produced by the L2 learners, 5 error cases were found.

by that of the  $V_1$ -*zhe*- $V_2$  pattern. The L2 learners made fewest errors when they used the *V-zhe* pattern. It seems that they had acquired the *V-zhe* pattern. What is peculiar about the errors is that 50% of the  $V_1$ -*zhe*- $V_2$  cases produced by the A2 learners were non-target-like and 5 among the 14 (i.e. 35.7%) instances of the  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  pattern produced by the B1 learners were not correct. These errors, along with the avoidance strategy, are discussed in more detail in the following subsections.

### 5.1 *V-zhe* errors

Fifteen non-target-like tokens of the *V-zhe* pattern were found and the errors can be categorized as follows.

First, *-zhe* was sometimes misused by the L2 learners as the locative preposition *zai*. Five such error cases were found, e.g. (27).

(27) \*Na-wei xiaojie shengri hui de shihou zuo-zhe ni de duimian.  
 that-CL miss birthday party DE time sit-ZHE you DE face.to.face  
 ‘That lady sat right across from you at the birthday party.’ (Japanese, B1)<sup>21</sup>

Second, *-zhe* was sometimes mistaken as the complementizer *-de* (two tokens) or as the manner adverb marker *-de* (one token), as shown in (28) and (29) respectively. *Guo-zhe* in (28) should be *guo-de* and *xiaoxiao-zhe* in (29) should be *xiaoxiao-de*.

(28) \*Wo juede zhe-ge zhoumo women guo-zhe haowan ji le.  
 I feel this-CL weekend we pass-ZHE interesting extreme LE  
 ‘I felt that we had a very interesting weekend.’ (Lithuanian, B1)

(29) \*Mingtian wo neng jiandao gen zuotian yiyang xiaoxiao-zhe  
 tomorrow I can see with yesterday same smile-ZHE  
 kan-zhe wo shuo “Tianhua, zaoan” de ni.  
 look-ZHE I say Tianhua good.morning DE you  
 ‘Tomorrow I can see you look at me with a smile and say “Tianhua, good morning,” just like yesterday.’ (Korean, B2)

Third, there were seven instances where *-zhe* was required to occur with progressive markers for marking the progressive aspect or was in conflict with an initial or final endpoint.

<sup>21</sup> For the data taken from the learner corpus, we mark the learner’s L1 and proficiency level.

Recall from our discussion in Section 2 that *-zhe* marks continuity and durativity. On the one hand, *-zhe* marks an ongoing action if it occurs with the progressive markers *zai*, *zheng*, or *zhengzai*, as in (6a), repeated as (30). On the other hand, *-zhe* marks the continuity of a resultant state when it occurs with verbs such as *zuo* ‘sit’ and *chuan* ‘wear’, as in (10b), repeated as (31). In (31), the resultant state refers to the poem written in the letter. Only a locative inversion pattern is allowed here; otherwise, the sentence is ungrammatical, e.g. (32).

- (30) Ta zai fangjian li ting-zhe yinyue.  
 he at room in listen-ZHE music  
 ‘He is listening to the music in the room.’ (constructed example)
- (31) Xin shang xie-zhe yi-shou shi.  
 letter on write-ZHE one-CL poem  
 ‘The letter has a poem in it.’ (Yu & Ueda 1999: 160)
- (32) \*Yi-shou shi xie-zhe (zai) xin shang.  
 one-CL poem write-ZHE at letter on

However, the L2 learners sometimes took *-zhe* alone to be a progressive marker, as shown in (33).<sup>22</sup>

- (33) \*Xie-zhe zhe-ge wenzhang zhong, xiang qilai le tiankong de  
 write-ZHE this-CL article middle think up LE sky DE  
 lan-se, shufude feng, haibian de weidao.  
 blue-color comfortable-DE wind beach DE smell  
 ‘When I was writing this article, I thought of the blue sky, the comfortable wind  
 and the smell of the beach.’ (Japanese, B1)

In other cases, *-zhe* was used for marking an initial point or was in conflict with a final endpoint. Smith (1997:276) suggests that *-zhe* presents a moment or interval of a situation that includes neither the initial (with the exception of an imperative sentence) nor the final endpoint and Zhang (1996) and Lin (2002) also propose that *-zhe* selects an atelic situation as its complement. An example of the misuse of *-zhe* for marking an initial point by a learner is given in (34), where *huo-zhe* should be

<sup>22</sup> It is noted by Smith (1997:276) that *-zhe* is becoming a general imperfective marker and gradually taking over the function of *zai* in some dialects of Mandarin, especially in Northern China. However, the native speakers we consulted in Taiwan cannot accept progressive sentences like (i).

(1) \*Xie-zhe zhe-pian wenzhang shi, ...  
 write-ZHE this-CL article time  
 ‘When (I) was writing this article, ...’

replaced with *huo-xiaqu* ‘live-down: live on’, in which *xiaqu* marks the inchoative aspect, i.e. the initial point is included.

- (34) \*Gaozhong de shihou fumu yijing guoshi le, ta hoaxing  
 high.school DE time parents already pass.away LE she seem  
 keyi huo-zhe.  
 can live-ZHE  
 ‘Her parents passed away when she was in high school. She seemed to be able to live on.’ (Indonesian, B1)

More examples in which *-zhe* was used in conflict with a final endpoint are given in (35)–(38). In (35), the endpoint *Gaoxiong* is specified and *-zhe* cannot occur in this sentence; otherwise, the sentence is ungrammatical. L2 learners may not be aware of this constraint and hence made errors like (35)–(38). In (36), the complement *-guo* indicates that the car has already crossed the road, that is, the road-crossing event has been completed and the final endpoint is specified. In (37), the endpoint of the walking event is specified by the duration phrase *san fenzhong* ‘three minutes’ as well as by the following verb *dao* ‘arrive’; therefore, it is not appropriate to use *-zhe* after the verb *zou* ‘walk’. In (38), an endpoint (or change of state) is implied because the state is changed from not bringing any money to bringing some money and that is why *-zhe* should not be used.

- (35) Ta cong taibei yilu benchi(\*-zhe) dao Gaoxiong  
 he from Taipei all.the.way gallop(-ZHE) arrive Kaohsiung  
 ‘He drove speedily all the way from Taipei to Kaohsiung.’ (constructed example)
- (36) \*You yi-liang hong-se-de qiche qi-guo-zhe malu.  
 have one-CL red-color-DE car ride-pass-ZHE road  
 ‘A red car had been riding across the road.’ (Vietnamese, A2)
- (37) \*Fujin you gongche zhan, cong wo-jia zou-zhe san fenzhong  
 nearby have bus station from I-home walk-ZHE three minute  
 jiu dao.  
 JU arrive  
 ‘There is a bus stop near my house. It only takes three minutes to walk there.’  
 (Japanese, B1)

- (38) \*Ta lijiachuzou bu dai-zhe yixie qian.<sup>23</sup>  
 he run.away.from.home NEG bring-ZHE some money  
 ‘He ran away from home without bringing any money with him.’ (Japanese, B1)

There are also errors that can be attributed to the L2 learners’ being unaware of the constraint that in Mandarin, no adverbial phrase can appear after a verb marked with the aspectual marker *-zhe*, no matter whether it is a phrase of location or duration, as shown in the errors made by the L2 learners in (39) and (40).

- (39) \*Ta zhan-zhe zai na-ge difang de shihou, jue ding ta xuyao wen  
 he stand-ZHE at that-CL place DE time decide he need ask  
 biede ren zenme qu.  
 other person how go  
 ‘When he was standing in that place, he decided that he needed to ask other people how to get there.’ (English, A2)
- (40) \*Ta deng-zhe gongche hen-jiu le, shijian yijing zhongwu le.  
 he wait-ZHE bus very-long LE time already noon le  
 ‘He has been waiting for the bus for a long time. It’s noon already.’  
 (Japanese, B1)

Some mechanisms can be employed to make the sentences grammatical. For sentences with a locative phrase after *V-zhe*, e.g. (39), the locative PP can be relocated to the front of the verb, as in (41). For sentences with a durative adverbial, e.g. (40), a verb reduplication pattern should be used. (42) is such an example. In this pattern, the first verb phrase, *chi-fan* ‘eat-rice’ in (42), is considered an adjunct (Huang 1982) and no aspect markers can appear within the phrase. That is, *-zhe* cannot be used after the first verb in this pattern. Thus, to make (40) acceptable, *-zhe* should be removed and the verb *deng* ‘wait’ has to be repeated, as in (43).

- (41) Ta zai na-ge difang zhan-zhe de shihou, ...  
 he at that-CL place stand-ZHE DE time  
 ‘When he was standing in that place, ...’

<sup>23</sup> One of the reviewers suggests that the ungrammaticality of (38) may come from the misuse of *bu* for *meiyou* (both are negative markers) and *yixie* ‘some’ for *banmao* ‘half penny’. The observation is absolutely correct. However, even when we replace *bu* with *meiyou* and *yixie* with *banmao*, the sentence with *-zhe* is still quite marginal, but if a locative phrase (e.g. *shen-shang* ‘body-on’) is added, the sentence becomes acceptable, as shown in (i).

(i) Ta lijiachuzou \*(shen-shang) meiyou dai-zhe banmao qian.  
 he run.away.from.home body-on NEG bring-ZHE half.penny money  
 ‘He ran away from home without bringing any money with him’

- (42) Ta chi-fan chi-le yi-ge xiaoshi.  
 he eat-rice eat-LE one-CL hour  
 ‘He ate the meal for an hour.’
- (43) Ta deng-gongche deng hen-jiu le.  
 he wait-bus wait very-long LE  
 ‘He has been waiting for the bus for a long time.’

In sum, the types of errors made by the L2 learners regarding the *V-zhe* pattern include the misuse of *-zhe* for the preposition *zai* or the manner adverb marker/complementizer *-de*, the underuse of other progressive markers with *-zhe* for marking the progressive aspect, the overuse of *-zhe* in places where *-zhe* is in conflict with an initial or final endpoint, and the misuse of *-zhe* with a verb followed by an adverbial phrase.

## 5.2 *V<sub>1</sub>-zhe-V<sub>2</sub>* errors

All the 35 errors of *V<sub>1</sub>-zhe-V<sub>2</sub>* came from the [[Adjunct *V<sub>1</sub>-zhe*] *V<sub>2</sub>*] type. As noted in Section 2.2.1, the event denoted by *V<sub>1</sub>* in this pattern must be some action that has a resultant state or a state that can be maintained for a period of time, such as *na* ‘take, hold’, *zuo* ‘sit’, *chuan* ‘wear’, and cannot be action verbs that do not denote a sustainable resulting state, such as *tiao* ‘jump’ and *shuo* ‘talk’. In 24 out of the 35 non-target-like cases, the VP headed by *V<sub>1</sub>* doesn’t denote a resultant state, e.g. in (44) and (45).

- (44) \*Tamen tan-zhe-hua kai-che.  
 they talk-ZHE-word drive-car.  
 ‘They were talking and driving.’ (Indonesian, A2)
- (45) \*Baba jie wo yihou jiu da-zhe wo ma wo.  
 father pick.up I after JIU hit-ZHE I scold I  
 ‘My father hit me and scolded me after he picked me up.’ (Japanese, B1)

As discussed in 2.2.1, the situation denoted by *V<sub>1</sub>* in the [[Adjunct *V<sub>1</sub>-zhe*] *V<sub>2</sub>*] pattern serves as background information for the action denoted by *V<sub>2</sub>* and the two actions overlap with each other. For example, in (46), the action *zhan* ‘stand’ serves as background information for *kanshu* ‘read’ and the two actions occur simultaneously. Sometimes L2 learners were not aware of this relationship between the two verbs. In (47), the actions denoted by the first verb *duo* ‘hide’ and the second verb *qu* ‘go’ cannot occur at the same time since one cannot be hiding and going somewhere simultaneously.

- (46) Ta zhan-zhe kanshu.  
 he stand-ZHE look.book  
 ‘He read while standing.’ (constructed example)
- (47) \*Chang zai baba de bei-hou duo-zhe qu.  
 often at father DE back-behind hide-ZHE go  
 ‘\*(I) often went behind my father’s back, hiding.’ (Korean, B1)

It has also been noted in 2.2.1 that  $V_2$  in the  $[[\text{Adjunct } V_1\text{-zhe}] V_2]$  pattern cannot be a stative or psych verb. One such mistake was found in the L2 data, as shown in (48).

- (48) \*Wo zai lu-shang zhan-zhe danxin.  
 I at road-on stand-ZHE worry  
 ‘I stood on the road, worried.’ (English, A2)

Like in the  $V\text{-zhe}$  pattern, in six of the non-target-like cases of  $[[\text{Adjunct } V_1\text{-zhe}] V_2]$ , the L2 learners seemed to mistake *-zhe* for the manner adverb marker *-de*, as shown in (49).

- (49) \*Laoshi shengqi-zhe shuo bie chidao.  
 teacher angry-ZHE say NEG late  
 ‘The teacher said angrily, “don’t be late.”’ (Japanese, A2)

Like in the  $V\text{-zhe}$  pattern, the L2 learners sometimes mistook *-zhe* for the locative preposition *zai*. Three such instances were found. (50) is one of them.

- (50) \*Laoshi zhan-zhe qian-mian jiao-shu.  
 teacher stand-ZHE front-face teach-book  
 ‘The teacher was standing in the front while teaching.’ (Indonesian, A2)

Generally speaking, in addition to mistaking *-zhe* for the manner adverb marker *-de* or the preposition *zai*, as in the  $V\text{-zhe}$  pattern, most errors that the learners made can be attributed to their not being fully aware of the semantic properties of the two verbs in the  $[[\text{Adjunct } V_1\text{-zhe}] V_2]$  pattern.

### 5.3 $V_1\text{-zhe-V}_1\text{-zhe-(jiu-)}V_2$ errors

The error rate of  $V_1\text{-zhe-V}_1\text{-zhe-(jiu-)}V_2$  was the highest among the three *-zhe* patterns. Among the 54 cases of the  $V_1\text{-zhe-V}_1\text{-zhe-(jiu-)}V_2$  pattern, 18 non-targeted

instances were found, 12 made by the A2-level learners and 5 by the B1-level learners. In 14 out of the 18 non-targeted cases, conjoining adverbials like *jiu* ‘and then’, *turan* ‘suddenly’ and *huran* ‘suddenly’ were missing. The five errors found in the B1 level all belong to this type.

As discussed in Section 2,  $V_1$ -*zhe*- $V_1$ -*zhe* in  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  indicates an ongoing action and  $V_2$  denotes a goal achieved by doing the action denoted by  $V_1$ , which is directly or indirectly related to the realization of  $V_2$ . In the 14 cases where the conjoining adverbials were missing, certain relationships between the two verbs in  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  can be found. In other words, the L2 learners were aware of the relationship between the two verbs but did not clearly know how to conjoin the two parts. (51) and (52) are two examples produced by the L2 learners.

- (51) \*Women    tiao-zhe-tiao-zhe            wang-le    shijian.  
           we            dance-ZHE-dance-ZHE    forget-LE    time  
           ‘We danced and danced and then we forgot the time.’ (Vietnamese, A2)
- (52) \*Women    zou-zhe-zou-zhe,            dao-le    yi-ge    difang.  
           we            walk-ZHE-walk-ZHE    arrive-LE    one-CL    place  
           ‘We walked and walked and then we arrived at a place.’ (Korean, B1)

However, in the other 4 non-target-like cases, such a relationship between the two verbs cannot be found, as shown in (53)–(56). In (53),  $V_1$  is *xiang* ‘think’ and  $V_2$  *buneng liaojie* ‘cannot understand’. The problem here is that the VP headed by  $V_2$  does not denote a goal that has been achieved because the speaker did not know what was going on even after thinking about it for a day.

- (53) \*Zhe    daodi    shi    zenme    hui    shi,    wo    yi    zheng    tian  
           this    after.all    be    how    CL    affair    I    one    whole    day  
           xiang-zhe-xiang-zhe    ye    buneng    liaojie.  
           think-ZHE-think-ZHE    also    cannot    understand  
           ‘What on earth was going on? I thought about it for a whole day and still couldn’t figure it out.’ (Korean, B2)

Like (53), the VP headed by the  $V_2$  *shuohua* ‘speak’ in (54) doesn’t denote an Achievement; it is an action instead. That is why the sentence is not acceptable.<sup>24</sup>

<sup>24</sup> Note that (i) means that we are waiting to talk (to someone) and not we are talking while waiting.  
 (i) Women    deng-zhe    shuohua.  
           we            wait-ZHE    speak  
           ‘We are waiting to talk (to someone).’



Similarly, *huijia* ‘go home’ in (55) does not indicate that a goal is achieved. *Huijia* is an Accomplishment verb with *jia* ‘home’ marking a goal, but (55) does not imply that the boy has arrived home; that is, the goal has not been achieved yet. If the second part of the sentence is worded as in (55’), then it becomes acceptable.

(54) \*Women deng-zhe-deng-zhe shuohua.

we wait-ZHE-wait-ZHE speak

‘We were waiting and waiting and then we talked.’ (English, A2)

(55) \*Nanhaizi kaixinde budeliao xiao-zhe-xiao-zhe huijia.

boy happy-DE extremely laugh-ZHE-laugh-ZHE return.home

‘The boy was extremely happy. He laughed all the way home.’ (Japanese, A2)

(55’) Xiao-zhe-xiao-zhe, buzhibujue jiu hui-dao jia le.

laugh-ZHE-laugh-ZHE unconsciously JIU return-arrive home LE

‘He laughed and laughed and then arrived at home.’

(56) is similar to the three examples above in that the goal denoted by the VP headed by  $V_2$  *dao* has not yet been achieved because the adverbial *kuai* ‘about to’ appears before the verb.

(56) \*Wo zuoche gen ta tan-zhe-tan-zhe kuai dao huoche-zhan.

I take.bus with he talk-ZHE-talk-ZHE about.to arrive train-station

‘I talked with him while taking the bus, and then we were about to arrive at the railway station.’ (Korean, A2)

In sum, most of the  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  errors resulted from the L2 learners not being aware of the need to use a conjoining adverbial between  $V_1$ -*zhe*- $V_1$ -*zhe* and  $V_2$ , although they seemed to understand the relationship between  $V_1$  and  $V_2$ . Only a small number of errors came from their lack of understanding that the VP headed by  $V_2$  must denote some achieved goal. All of the last four instances above belong to this type.

#### 5.4 Errors caused by avoidance

Studies (e.g. Schachter 1974, Kleinmann 1977, James 1998) have shown that error analysis fails to account for the strategy of avoidance. To find out how often the L2 learners avoided using *-zhe* and where *-zhe* was more likely to be avoided, we examined 5570 complete sentences retrieved from the corpus and found that *-zhe* was missing in three of them. This percentage is relatively low. A similar finding was

reported in Gao (2006). Gao examined the occurrences of *-zhe* in her corpus<sup>25</sup> and found 871 instances of *-zhe* but no avoidance cases were detected. She suggests that the avoidance phenomenon is full of uncertainty. As so few missing cases of *-zhe* were found in the sentences we examined, it seems that the avoidance strategy was not frequently used by the L2 learners and hence a systematic discussion is not possible in this study.

## 6. The role of L1

Learners' first languages are generally considered to play an important role in their second language acquisition. As the data examined in this study came from a corpus contributed by learners of different L1 backgrounds, it is difficult for us to identify the influence of each learner's L1 on their learning of *-zhe* in Mandarin. In this section, we discuss the data contributed by learners whose L1's were Japanese, English and Korean respectively, for their data constituted the highest percentages in the *-zhe* instances examined.

Of the 387 instances of *zhe* analyzed in this study, 91 (23.5%) were produced by L1 Japanese speakers, 71 (18.4%) by L1 English speakers, 55 (14.2%) by L1 Korean speakers, and the rest were contributed by L1 speakers of languages such as Indonesian, Vietnamese, Tibetan, Thai, Russian, Malay, German, and Dutch. Among the 68 errors found in the data, 29 were made by L1 Japanese speakers, 15 by L1 Korean speakers and 11 by L1 English speakers.<sup>26</sup> In the following, we examine the influence of these learners' native languages on their learning *-zhe* in Mandarin Chinese to see whether their L1's facilitated or interfered with their learning of Mandarin.

*-Zhe* in Mandarin is generally considered to correspond to *teiru* in Japanese. However, this is not always the case. According to Huang (1990:125), *teiru* has six

<sup>25</sup> The size of the corpus is not specified in Gao (2006).

<sup>26</sup> The distribution of the errors made by all the L2 learners, L1 Japanese speakers, L1 English speakers and L1 Korean speakers in terms of the three *-zhe* patterns is illustrated in the table below. In the table, we can see that L1 Japanese speakers' error rate of the V-*zhe* pattern and L1 Korean speakers' error rate of the V<sub>1</sub>-*zhe*-V<sub>1</sub>-*zhe*-(*jiu*-)V<sub>2</sub> pattern were much higher than the average. As the data was quite limited, the reason why the V-*zhe* pattern was especially difficult for learners whose L1 was Japanese and the V<sub>1</sub>-*zhe*-V<sub>1</sub>-*zhe*-(*jiu*-)V<sub>2</sub> pattern was especially difficult for learners whose L1 was Korean will be left for future research.

	All L2 learners	L1 Japanese	L1 English	L1 Korean
V- <i>zhe</i>	15/201 (7.5%)	7/30 (23.3%)	2/48 (4.2%)	1/21 (4.8%)
V <sub>1</sub> - <i>zhe</i> -V <sub>2</sub>	35/132 (26.5%)	14/41 (34.1%)	7/17 (41.2%)	10/29 (34.5%)
V <sub>1</sub> - <i>zhe</i> -V <sub>1</sub> - <i>zhe</i> -( <i>jiu</i> -)V <sub>2</sub>	18/54 (33.3%)	8/20 (40.0%)	2/6 (33.3%)	4/5 (80.0%)
Total	68/387 (17.6%)	29/91 (31.9%)	11/71 (15.5%)	15/55 (27.3%)

different functions—denoting continuity like *-zhe*, specifying resultant states like *-zhe* or *-le*, labeling habitual or iterative actions like *zai*, expressing ongoing activities like *zai*, *zhengzai*, *-le*, and *zheng*, describing perfective events like *le*, or signifying simple states. On the other hand, the various usages of *-zhe* can correspond to nine different forms in Japanese (Seio 2009:108), namely *teiru*, *tearu*, *te*, *nagara*, *teita*, *ta*, *tokoro*, *tsutsu*, and *mama*.

As for Korean, Bian (2012) suggests that the Mandarin *-zhe* in simple structures such as *V-zhe* roughly corresponds with the Korean forms *-ko yit-* and *-eo yit-* but may differ when co-occurring with dynamic or stative verbs. In addition, in complex structures such as *V<sub>1</sub>-zhe-V<sub>2</sub>* sentences, *-zhe* corresponds with other forms in Korean such as *-seo*, e.g. (57).

- (57) geuneun nu-woseo manhwachaeg-eul bogo itda  
 He-NOM lie-SEO comic.book-ACC read PROG  
 ‘He reads comic books while lying on the bed.’ (Jin 2008:68)

According to Jin (2008) and Bian (2012), there is no regular correspondence between *-zhe* in Mandarin and its counterparts in Korean, especially in the complex *V<sub>1</sub>-zhe-V<sub>2</sub>* structure. Hence, they suggest that native Korean speakers should view *-zhe* as something new and not base their understanding of it on Korean when learning Mandarin as a second/foreign language.

In the case of English, the *V-zhe* form may correspond to the English progressive form or denote durative resultant states, as mentioned in Section 1 and illustrated in (1a) and (1b). Besides, the various *V<sub>1</sub>-zhe-V<sub>2</sub>* forms correspond to different patterns in English, which is shown by the English counterparts in the examples given in Section 2, including a main clause with a subordinate clause (such as a purposive clause, a complement infinitive clause, or an adverbial clause) and two coordinated clauses, while the *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)V<sub>2</sub>* pattern corresponds to two clauses denoting two events that happen in a consecutive sequence. That is, like Korean and Japanese, we cannot find a consistent counterpart in English for *-zhe* in Mandarin.

Different hypotheses or theories concerning L1’s role in L2 learning have been proposed. The contrastive analysis hypothesis (CAH) emerged in the middle of the 20th century and suggests that the learner’s L1 has some effects on L2 learning, referred to as language transfer (Fries 1945). Supporters of this hypothesis (e.g. Fries 1949, Lado 1957, Catford 1983, Faerch & Kasper 1987) claim that cross-linguistic differences result in obstacles to L2 learning (i.e. negative transfer) whereas similarities lead to learning facilitation (i.e. positive transfer) and that the difficulty that L2 learners may encounter can be predicted by studying the differences between

L1 and L2. According to the CAH based hierarchy of difficulty proposed by Stockwell, Bowen & Martin (1965) and elaborated by Prator (1967), the level of difficulty faced by L1 Japanese speakers, Korean speakers and English speakers in learning the *-zhe* patterns in Mandarin is the highest—level 5, namely “Split—one item in L1 becomes two or more in L2 and the learner is required to make a new distinction,” based on our discussion above.<sup>27</sup> Jin (2008) hence suggests that L1 Korean learners should consider *-zhe* as a brand new item when learning Mandarin as a second language. This suggestion could be extended to L1 Japanese and English speakers as well.

Different from the CAH, later scholars such as Whitman & Jackson (1972) put emphasis on cross-linguistic influence (CLI) rather than prediction. Oller & Ziahosseiny (1970) found that the learning of sounds, sequences, and meanings would be potentially very difficult where subtle distinctions are required either between the target language and the native language or within the target language itself. Other studies on CLI also suggest that subtle differences may cause great difficulty (e.g. Sjöholm 1995). This may explain why L2 learners have difficulty in learning *-zhe* in Mandarin since the various *-zhe* meanings and usages exhibit subtle differences.

In sum, there are subtle distinctions among the various meanings and usages of *-zhe* in Mandarin and no consistent one-to-one correspondences can be found between *-zhe* and the L2 learners’ native languages such as English, Korean and Japanese. Besides, our data did not indicate that the learners’ L1’s were significantly related to their learning of *-zhe* in Mandarin. Hence, for L2 learners, *-zhe* is better viewed as a brand new item and should be learned independently of their first languages.

## 7. Pedagogical implications and concluding remarks

In this study, we discussed the semantic and syntactic characteristics of *-zhe* and then divided *-zhe* into three patterns, namely *V-zhe*, *V<sub>1</sub>-zhe-V<sub>2</sub>* and *V<sub>1</sub>-zhe-V<sub>1</sub>-zhe-(jiu-)-V<sub>2</sub>*. *V-zhe* was further divided into two subtypes according to the dynamicity of the verb, and *V<sub>1</sub>-zhe-V<sub>2</sub>* was categorized into four types according to the syntactic and semantic relationships between the two verbs. Based on this categorization, we analyzed the data produced by L2 learners and the findings are summarized as follows.

In terms of the L2 learners’ acquisition of the three *-zhe* patterns and subtypes, our findings are: (a) The *V-zhe* pattern was the most frequently used, followed by the

<sup>27</sup> Jin (2008) suggests that the L2 learning of the Mandarin *-zhe* by L1 Korean speakers is of Level 3 difficulty — “Reinterpretation—an item in L1 is given a new distribution in L2.” But this is not completely correct, as shown in our discussion above.

$V_1$ -*zhe*- $V_2$  pattern, while  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  was the least frequently used. This is perhaps because the *V-zhe* pattern is the simplest syntactically. (b) The L2 learners at higher proficiency levels seemed to use the *V-zhe* pattern more frequently than those at lower proficiency levels while the frequency of  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  decreased as the learners' proficiency level increased. This fact could reflect some pedagogical effect: the  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  pattern was introduced in the second volume of the textbook, and that is perhaps why A2-level learners used it most frequently. (c) Like the native speakers, the L2 learners' use of the non-dynamic *V-zhe* pattern was much more frequent than that of the dynamic one, perhaps reflecting Yu & Ueda's (1999) finding that, historically, *-zhe* appeared with verbs denoting durative and/or continuous stative situations before its occurrence with verbs denoting dynamic situations or events. (d) Among the four  $V_1$ -*zhe*- $V_2$  subtypes, [[Adjunct  $V_1$ -*zhe*]  $V_2$ ] was used much more often by the L2 learners than by L1 speakers while more cases of [ $V_1$ -*zhe* [Complement  $V_2$ ]] were found in the L1 data than in the L2 data. The other two subtypes (i.e. [ $V_1$ -*zhe* [Adjunct  $V_2$ ]] and [[ $V_1$ -*zhe*][ $V_2$ ]]) were rarely found in either the L1 or L2 data. These findings perhaps echo Chu (1987) and Chu & Chi's (1999) proposal that *-zhe*'s primary function is to subordinate a clause. It may also reflect a pedagogical effect because, of the four  $V_1$ -*zhe*- $V_2$  subtypes, only [[Adjunct  $V_1$ -*zhe*]  $V_2$ ] was included in the textbook. (e) The error rate of  $V_1$ -*zhe*- $V_1$ -*zhe*-(*jiu*-) $V_2$  was the highest among the three *-zhe* patterns followed by that of the  $V_1$ -*zhe*- $V_2$  pattern. The L2 learners made the fewest errors when they used the *V-zhe* pattern. This again perhaps indicates that the *V-zhe* pattern is the simplest syntactically and is supported by Eckman's (1977, 1981) markedness theory, i.e. Markedness Differential Hypothesis—a marked member of a pair contains at least one more feature than the unmarked one and the unmarked member is the one with a wider range of distribution. Eckman (1981) also suggests that marked items in a language are more difficult to acquire than the unmarked ones.

If the learners' proficiency levels are considered, some developmental sequences may be seen. First, the C1-level L2 learners' performance was closest to that of native speakers' and the error rates decreased as the learners' proficiency levels increased. These two findings indicate that L2 learners' competence of *-zhe* developed inline with their overall proficiency. Second, the frequency of A2-level L2 learners' using *V-zhe* with a dynamic meaning was the highest and C1-level learners the lowest, which probably implies that the L2 learners considered *-zhe* a progressive marker in the beginning and then gradually became aware of the fact that *-zhe* is used as a durative marker more often than as a dynamic progressive marker.

When the non-target-like cases were examined, some error types were discovered. First, the L2 learners often misused *-zhe* as the locative preposition *zai*, the manner

adverb marker *-de*, or the complementizer *-de*. In terms of the *V-zhe* pattern, the learners may underuse progressive markers for marking the progressive aspect or overuse *-zhe* in places where *-zhe* is in conflict with an initial or final endpoint or misuse *-zhe* with a verb followed by an adverbial phrase. Most errors the learners made in the  $V_1\text{-}zhe\text{-}V_2$  pattern can be attributed to their not being fully aware of the semantic properties of the two verbs in the pattern. Moreover, most of the  $V_1\text{-}zhe\text{-}V_1\text{-}zhe\text{-}(jiu\text{-})V_2$  errors resulted from the L2 learners not being aware of the need to use a conjoining adverbial between  $V_1\text{-}zhe\text{-}V_1\text{-}zhe$  and  $V_2$ , and others came from their lack of the knowledge that the VP headed by  $V_2$  must denote some achieved goal.

Although the data was contributed by learners from various L1 backgrounds, we examined *-zhe*'s counterparts in the three L1's of the learners who contributed most of the data, namely Japanese, English and Korean, and found no consistent and systematic correspondence between *-zhe* and its counterparts in these three languages. Hence, for L2 learners, the best strategy in learning how to use *-zhe* is to regard it as a brand new item and learn it independently of their first languages.

The findings summarized above have some pedagogical implications. First, the textbook should give L2 learners a more complete picture of the aspect marker *-zhe* and its semantic and syntactic properties should be more thoroughly introduced. If the teaching sequence of the three *-zhe* patterns is considered, the *V-zhe* pattern should be taught first since it is most frequently used by both native speakers and L2 learners; the second one to be introduced should be the most informal pattern,  $V_1\text{-}zhe\text{-}V_1\text{-}zhe\text{-}(jiu\text{-})V_2$ , in which the use of a conjoining adverbial like *jiu* needs to be emphasized;  $V_1\text{-}zhe\text{-}V_2$  should be the last pattern taught and the relationships between the two verbs need to be explicitly explained as they are quite complicated. Among the four subtypes of  $V_1\text{-}zhe\text{-}V_2$ ,  $[[\text{Adjunct } V_1\text{-}zhe] V_2]$  should be introduced first since it is the most frequently used, followed by  $[V_1\text{-}zhe [\text{Complement } V_2]]$  and then by  $[V_1\text{-}zhe [\text{Adjunct } V_2]]$  and  $[[V_1\text{-}zhe][V_2]]$ . The teacher should also draw the learner's attention to the differences between *-zhe* and the preposition *zai*, manner adverb marker *-de* and complementizer *-de*. Moreover, *-zhe* is better learned as a brand new item by L2 learners than as an item corresponding to certain elements in their L1's. This is especially important if the learner group is composed of students from different language backgrounds.

This study, however, has some limitations. First, the data was retrieved from a corpus containing the learners' written texts; therefore, the usage that is more likely to appear in the spoken form may not be fully covered. Second, the number of tokens of *-zhe* produced by the learners at each level was not the same, the number produced by the C1-level learners being especially low. Third, production data is only a subset of

the learner's overall performance. Comprehension data should also be considered. Fourth, as the corpus was not built by us, the authors and the complete passages could not be obtained, and the data could only be discussed from semantic and syntactic perspectives; a discourse-oriented analysis is left to future research. Despite these limitations, it is hoped that our analysis of the semantic and syntactic properties of *-zhe* and the findings about L2 learners' acquisition of *-zhe* may have contributions to teaching Mandarin as a second or foreign language.

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## 中文「著」的第二語言習得：語料庫研究

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本研究檢視了中文時貌標記「著」的句法及語義特性，並針對成人二語學習者如何習得「著」進行探討。本研究使用的語料來自中央研究院平衡語料庫及國立台灣師範大學國語教學中心經由線上測驗系統而建立的中介語語料庫。首先，我們把「著」的用法分為三類：「V 著」、「V<sub>1</sub> 著 V<sub>2</sub>」、及「V<sub>1</sub> 著 V<sub>1</sub> 著（就）V<sub>2</sub>」，再將這三類分為次類，以此分析比較中介語語料庫以及中央研究院平衡語料庫的語料。本研究發現有三：（1）高級學習者使用各種「著」的情形與母語者最相似。（2）學習者程度愈高，「V 著」的使用比率也隨之增加。（3）學習者程度愈高，「V<sub>1</sub> 著 V<sub>1</sub> 著（就）V<sub>2</sub>」的使用比率亦隨之減少。本研究亦檢視了學習者使用「著」時的偏誤，此偏誤分析使我們對「著」的二語習得更加了解。本研究建議，「著」的二語教學必須顧及「著」的句法、語義以及與「著」同現的動詞間的關係。

關鍵詞：時貌標記「著」、二語習得、中介語語料庫、中文